

Entrepreneurial Self-Efficacy for Entrepreneurial Readiness in a Developing Context: A Survey of Exit Level Students at TVET Institutions in Nigeria

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Abstract

Entrepreneurial self-efficacy (ESE) has been described as the cognitive element that can stimulate entrepreneurial readiness. There is a paucity of research on whether graduates of Technical and Vocational Education and Training (TVET) institutions in Nigeria are entrepreneurially ready for future work, particularly in the field of entrepreneurship. Previous studies have noted that individuals will not take entrepreneurial action until certain personality traits are triggered. This study investigated the entrepreneurial readiness of exit level students using ESE task phases at three selected TVET institutions in Nigeria. It will assist policymakers in identifying the specific cognitive traits that can stimulate entrepreneurial behavior in students. A sample of 301 exit level students was selected from a target population of 1,212 using a convenience sampling technique. Only 289 students participated in the study. The quantitative data was analyzed using Pearson Product Moment Correlation to test the relationships among variables, and regression analysis was conducted to determine the level of influence between ESE and entrepreneurial readiness. The study found that, while other components of ESE positively impact students' entrepreneurial readiness, ESE marshaling does not have a significant impact. While all the other pairs of ESE show significant relationships with the male students' entrepreneurial readiness, only ESE implementing has a significant relationship with the female students' entrepreneurial readiness. We thus conclude that the entrepreneurship education curriculum at the selected TVET institutions is not adequately addressing training in ESE marshaling skills. The implication for practice is that entrepreneurship training should focus on building economic resources skills for business start-ups.

Keywords

entrepreneurial self-efficacy, entrepreneurial readiness, skills, self-efficacy, technical, and vocational education and training, business creation

Introduction

According to a Global Entrepreneurship Monitor (GEM) 2017 report, 7.7% of the global population launches new business ventures each year. The pool of graduates produced annually by various academic institutions outnumbers the number of employment opportunities created (Global Youth Employment Trends, 2020). According to the Organisation for Economic Cooperation and Development (OECD) 2019, 137 million graduates between the ages of 24 and 34 were produced globally in 2013, with the number expected to rise to approximately 300 million by 2030. In 2019, around 429 million of the 497 global youth population of working age were employed, while about 68 million were available and

looking for work, but unemployed (Global Youth Employment Trends, 2020). Employment opportunities among the youth are expected to decrease due to the impact of the global Covid-19 pandemic.

A recent report by the World Bank (2019) notes that, youth unemployment in the United States (US) stands at 8.5%, with the figures for other countries as follows: United Kingdom

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(UK) 11.3%; Germany 5.4%; Denmark 9.8%; China 10.3%; Japan 3.7%; Canada 10.8%; Burundi 2.7%; Kenya 7.2%; Rwanda 1.7%; Burkina Faso 8.3%; Benin 4.4%; Cameroun 5.8%; Cote d'Ivoire 5.1%; Ghana 9.2%; Guinea Bissau 3.9%; Madagascar 3.1%; Senegal 8.2%; and Nigeria 14%. These statistics show that the youth unemployment rate in Nigeria is among the highest in Africa. Cueto et al. (2015) argue that one of the ways to reduce unemployment is self-employment which is associated with entrepreneurship.

Previous studies in developing countries indicate that youth unemployment is exacerbated by the limited rate of job creation or self-employment (Adesugba & Mavrotas, 2016). A regional analysis in Spain by Cueto et al. (2015) concluded that self-employment is a solution to a lack of wage employment. Startiene and Remeikiene's (2009) empirical research in Lithuania found that education of unemployed men and women is significantly associated with the number of established and operating companies. Bomani et al.'s (2019) study revealed that the Higher Education Institutions (HEIs) are promoting the development of SMEs through technology transfer, workshops, short courses, and consultancy services in Zimbabwe. The results further revealed that HEIs also provide skilled manpower for SMEs, and that entrepreneurship courses promote an entrepreneurial spirit among university students (Bomani et al., 2019; Adeniyi & Ganiyu, 2021). A study conducted in South Africa by Mahadea and Kaseeram (2018) revealed that income growth was the pull factor and unemployment was the push factor to entrepreneurship. In other words, individuals without employment were forced into self-employment in order to survive. Due to the low rate of self-employment, governments in many countries, including Nigeria, have sought to develop entrepreneurship skills through the establishment of Technical and Vocational Education and Training (TVET).

TVET is regarded as an economic tool to alleviate poverty and unemployment (UNESCO-UNEVOC, 2012). UNESCO-UNEVOC (a term that combines UNESCO and Vocational education) has been at the forefront in promoting and implementing TVET skills acquisition projects in many developed and developing economies. The pivotal role of TVET in training for self-employment and entrepreneurial development is evident in the most industrialized nations in the world, namely, the US, China, Germany, and Korea (UNESCO-UNEVOC, 2012). However, the entrepreneurial advantages of TVET have yet to be harnessed in Africa, particularly in Nigeria (Maigida et al., 2013). To this end, UNESCO-UNEVOC (2012) emphasized the need to integrate entrepreneurship and TVET institutions.

TVET was established in Nigeria in January 1977 (UNESCO, 2019) with the aim of enhancing the acquisition of entrepreneurial skills for self-employment and business creation, thereby reducing the rate of unemployment, especially among the youth. However, the majority of TVET graduates are not self-employed (Fagge, 2017; Wube & Dessie, 2017). Ibrahim and Lucky (2014) observe that

appropriate entrepreneurial skills for business creation and reduced unemployment among the youth in Nigeria have yet to be achieved. Hence, the majority of graduates from these institutions lack the required entrepreneurship skills and are unable to establish businesses (Audu et al., 2013). Research has also shown that graduates of TVET institutions in Nigeria are not entrepreneurially ready for business creation (Edokpolor & Owenbiugie, 2017). Oviawe (2010) assert that the non-inclusion of entrepreneurship programs in TVET curricula is hindering entrepreneurship development in the country. To this end, various studies have called for a focus on effective implementation of training on different aspects of entrepreneurship in the country's TVET institutions (Fagge, 2017; Olaniran & Mncube, 2018).

Entrepreneurial readiness among the youth has been a critical global concern due to low business spin-offs. Scholars have noted that self-employment relies on the cognitive strength of an individual (Fayolle, 2013; Maritz & Brown, 2013). This is due to the fact that cognitive or psychological ability stimulates entrepreneurship activities (Chatterjee & Das, 2015). Based on this premise, Santos et al. (2014) suggest that cognitive ability such as entrepreneurial self-efficacy (ESE) must be included among the traits that drive a potential entrepreneur toward venture creation. Entrepreneurial self-efficacy has been identified as the most consistent personality trait that motivates entrepreneurial actions (Darmanto & Yuliari, 2018; Hermawan et al., 2016).

While the impact of multi-construct ESE on entrepreneurial behavior has been explored in developed contexts (Barbosa et al., 2007; De Noble et al., 1999; Mueller & Goić, 2003), few studies have been conducted on this concept in developing countries (Pihie & Bagheri, 2010; Setiawan, 2014). Setiawan's (2014) survey of 196 Indonesian university students found that students had low perceptions of coping with unexpected challenges in owning a business. This may be the reason for the low business start-up rate among the youth in developing countries. Pihie and Bagheri (2010) found that business challenges may discourage TVET students in Malaysia from venturing into business. Chawla and Bhatia (2020) measured the multi-construct ESE of university graduates in India and concluded that prior experience of entrepreneurship did not significantly change respondents' ESE. In Zambia, Mwiya et al. (2019) found that each dimension of ESE positively and significantly related to entrepreneurial intention. However, the ESE financial aspect had an insignificant relationship with nascent behavior. Lebusa's (2011) study revealed that entrepreneurship education failed to impact the ESE dimensions of university students in South Africa. The author called for thorough assessment of students' risk-taking and financial management skills as key components of ESE. Finally, Kisubi's (2021) empirical research established a negative and significant conditional effect of ESE between the entrepreneurial attitude and self-employment intention of undergraduate students in Ugandan universities.

Most of the studies on ESE in Nigeria have focused on Small and Medium Enterprises' (SMEs) performance (Abiodun, 2020; Eniola, 2020; Shamudeen et al., 2015). Furthermore, few studies have been conducted on the impact of ESE dimensions within the context of entrepreneurial readiness in Nigeria and little evidence exists on the development of entrepreneurial readiness through ESE task phases among the country's TVET students.

In the African context, the majority of research studies have investigated entrepreneurial readiness to start a business (Nchu et al., 2017; Quagrainie & Ariwa, 2016). Nchu et al. (2017) found that 52% of the surveyed learners were interested in starting a business, and advocated for curriculum reform to address entrepreneurial intention and readiness to start a new business. In similar vein, Quagrainie and Ariwa (2016) found that women entrepreneurs in Ghana are not e-ready for entrepreneurial activities due to the cultural environment and poor access to the Internet.

In Nigeria, the majority of studies on entrepreneurial readiness have been limited to university students (Akueshi et al., 2014; Salami et al., 2019; Yusuf & Ibrahim, 2019). For example, Akueshi et al. (2014) noted that, while the country produced 130,000 graduates each year, only 10% (13,000) obtained jobs. This implies that 90% of Nigerian graduates confront the challenge of unemployment every year.

Conceptual Framework

Entrepreneurial Readiness

Entrepreneurial readiness relates to one's ability or willingness to take entrepreneurial action (Coduras et al., 2016). Darmasetiawan (2019) argues that entrepreneurial readiness is determined by an individual's overall ability to respond to entrepreneurial activities. This supports Lau et al.'s (2012, p. 147) assertion that "*entrepreneurial readiness is an individual's cognitive attributes of capability and willingness to direct behaviour in an entrepreneurial context.*" This definition highlights the cognitive ability to explore various environmental opportunities and attain entrepreneurial success. Scholars identify different components of entrepreneurship readiness toward starting a new business (Coduras et al., 2016; Darmasetiawan, 2019; Olugbola, 2017; Schillo et al., 2016). Dardiri et al. (2019) are of the view that self-efficacy is a strong motivator of entrepreneurship readiness in the age of the fourth Industrial Revolution. Islami et al. (2017) found that higher self-efficacy can increase entrepreneurship readiness among students in vocational high schools.

Self-Efficacy

The concept of self-efficacy can be traced to the work of Bandura who defines it as an individual's confidence in his/her ability to successfully accomplish a specific task (Bandura et al., 1999). Self-efficacy plays a significant role in

how individuals think and behave. It is regarded as an individual's belief that he/she can complete any given task (Solfema et al., 2019). As a result, this concept has been considered as a potential entrepreneurial trait. For instance, Boyd and Vozikis (1994) refer to self-efficacy as a strong antecedent to entrepreneurial intention. Henry et al. (2005) state that it is a crucial element associated with successful entrepreneurs. Rauch and Frese (2007) believe that self-efficacy is a vital factor in increasing the possibility of business start-up. It is against this background that many scholars of entrepreneurship have conceptualized it as Entrepreneurial Self-efficacy (ESE), and defined it as the strength of one's perceived abilities to successfully assume the roles and responsibilities of an entrepreneur (Barbosa et al., 2007; Chen et al., 1998; De Noble et al., 1999).

Entrepreneurial Self-Efficacy

Entrepreneurial self-efficacy has been described as a distinctive trait that distinguishes an entrepreneur from a non-entrepreneur. Barbosa et al. (2007) assert that it is a major attribute that has a significant influence on entrepreneurial intention. Santos et al. (2014) posit that ESE is a cognitive ability of a potential entrepreneur. It is in this sense that ESE is considered as a psychological determinant of entrepreneurial success. Scholars have posited that an individual's ability to become a successful entrepreneur relies on his/her psychological strength (Fayolle, 2013; Henry & Mark, 2003; Maritz & Brown, 2013). This is premised on the assumption that certain psychological traits are peculiar to entrepreneurship (Chatterjee & Das, 2015).

However, there is growing consensus that, due to its multi-dimensional scope, some aspects of entrepreneurship can be taught (Fayolle, 2018; Sánchez, 2013). Empirical studies suggest that the development of ESE can be enhanced through entrepreneurship education (Chou et al., 2011; Maritz & Brown, 2013; Pihie & Bagheri, 2010, 2011). Entrepreneurship training enhances and increases the chances of owning a successful business.

Chen et al. (1998) identify five ESE skills required for venture creation, namely, marketing, innovation, management, risk-taking, and financial control skills. De Noble et al. (1999) identify six dimensions of ESE, including skills in risk and uncertainty management; innovation and product development; interpersonal and networking management; opportunity recognition; procurement and allocation of a critical resource; and development and maintenance of an innovative environment. These skills have been found to have a positive relationship with entrepreneurial intention (Kickul & D'Intino, 2005). Barbosa et al. (2007) examined cognitive styles and four task-specific types of ESE, including opportunity-identification self-efficacy, relationship self-efficacy, managerial self-efficacy, and tolerance self-efficacy. They concluded that the various dimensions of self-efficacy may have individual and unequal relationships

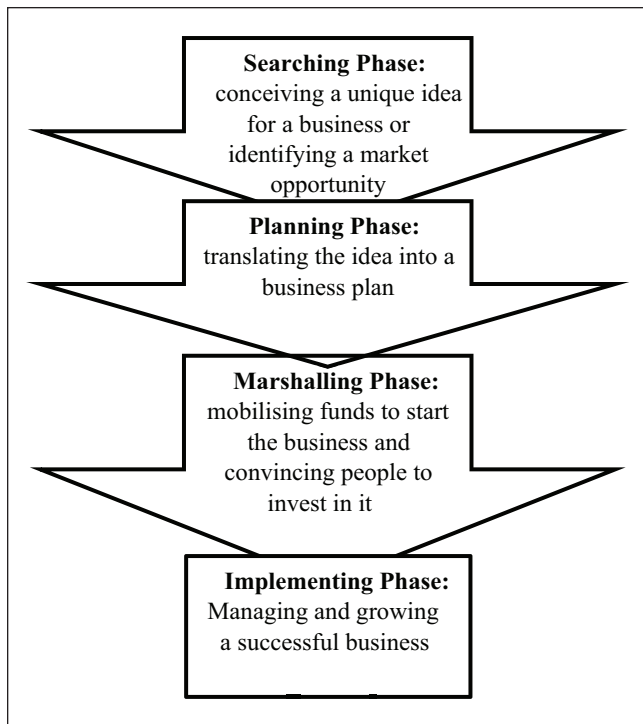


Figure 1. Entrepreneurial self-efficacy task phases.
Source: Cox et al. (2002).

with multiple dependent variables, specifically toward entrepreneurial intentions and nascent behavior. In similar vein, McGee et al. (2009) affirm that ESE is a multi-dimensional construct, and suggest that ESE searching, planning, marshaling, and implementing should be studied for business creation orientation.

Entrepreneurial Self-Efficacy and Entrepreneurial Readiness

Previous studies examined the interaction between ESE and entrepreneurial readiness (Dardiri et al., 2019; Darmasetiawan, 2019). Cadenas et al.'s (2020) research on the ESE and technology readiness of college students concluded that community support enhanced students' ESE, and Science Technology Engineering and Mathematics (STEM) entrepreneurship readiness. Similarly, Islami et al. (2017) established a significant relationship between self-efficacy and vocational students' entrepreneurship readiness. With regard to ESE dimensions, Dardiri et al. (2019) found that entrepreneurship understanding, interest in entrepreneurship, and self-efficacy significantly contributed to students' entrepreneurial readiness. Darmasetiawan (2019) demonstrated that readiness and ESE motivate SME actors in doing e-business. However, most of the studies on the multi-construct ESE have been conducted in developed countries (Barbosa et al., 2007; De Noble et al., 1999; McGee et al., 2009), with

limited research on the interaction between ESE dimensions and entrepreneurial readiness in developing contexts. Furthermore, empirical investigations reveal that there are key variations in entrepreneurial ecosystems between developing and advanced economies (Cao, 2018; Quinones et al., 2015). Therefore, the nexus between multi-construct ESE and entrepreneurial readiness in a developing country like Nigeria is of utmost importance. This study examined students' entrepreneurial readiness through the dimensions of ESE at three selected TVET institutions in Nigeria. The objective was to determine how ESE searching, planning, marshaling, and implementing influence students' entrepreneurial readiness. The findings will assist entrepreneurship educators to determine the individual student's ESE strengths or weaknesses toward entrepreneurial readiness.

The study adopted the ESE task phases of acquiring entrepreneurial skills popularized by Cox et al. (2002), and McGee et al. (2009) and originally conceptualized by Stevenson et al. (1985). This dimension was adopted due to its simplicity and ascending stages in developing nascent entrepreneurs among students in developing countries like Nigeria. It has been tested on diverse samples such as nascent entrepreneurs—individuals (TVET students) who are engaged in activities with the aim of establishing a new business—and non-nascent entrepreneurs (McGee et al., 2009).

As shown in Figure 1, the process includes four task phases of ESE: Searching, Planning, Marshaling, and Implementing.

According to Cox et al. (2002), the searching phase refers to how a unique idea is conceived, or an entrepreneur's identification of market opportunities. The planning phase describes how the unique idea can be designed into a business plan or proposal. The marshaling phase involves raising funds to start the business, convincing other people to invest in one's business idea and to team up with the business, and connecting with customers and suppliers. The implementing phase is about effectively managing and growing the business (Cox et al., 2002).

Hypotheses Formulation

In terms of opportunity identification's influence on entrepreneurial readiness, Dahalan et al. (2013) examined local community readiness for entrepreneurship, and established a significant relationship between business searching opportunity and the entrepreneurial readiness of men and women. However, the men showed more active readiness than the women. Through the effect of entrepreneurship training, Olugbola (2017) identified the positive impact of opportunity identification on students' entrepreneurial readiness. Based on these studies, we hypothesize that:

H1: ESE searching influences students' entrepreneurial readiness towards opportunity identification.

Mueller and Goić (2003) investigated differences in business students' ESE task phases in Croatia and the US. The study found that all parts of the ESE task phases (searching, planning, and implementing) were positively associated with the students' entrepreneurial orientation, but ESE marshaling was not significant. In similar vein, Nowiński et al. (2019) demonstrated that all phases of ESE multi-constructs significantly impacted the entrepreneurial intention of students from the four Visegrad countries. Olugbola (2017) examined the link between business resources and entrepreneurial readiness. The author conceptualized resources for business start-ups, and established that intellectual property, physical, and financial resources have a positive effect on university students' entrepreneurial readiness. We thus developed the following hypotheses:

H2: ESE planning influences students' entrepreneurial readiness to develop business opportunities into business plans.

H3: ESE marshaling influences students' entrepreneurial readiness to gather business resources.

A number of studies have examined ESE as a stimulant for business start-ups among students. Wilson et al. (2007) found that adolescent students with higher ESE are more likely to venture into business. Hermawan et al. (2016) concluded that ESE is a strong determinant of entrepreneurial literacy and entrepreneurship interest among vocational high school students. This concurs with Maritz and Brown (2013) who identified ESE as one of the antecedent traits that positively influences individuals' behavior to start a new business. Based on these empirical studies hypotheses four was developed.

H4: ESE implementing influences students' entrepreneurial readiness to start a new business.

Previous research studies investigated different dimensions of ESE. De Noble et al. (1999) found that non-entrepreneurship students demonstrated low perceptions of the overall ESE construct. Setiawan's (2014) empirical research with 199 undergraduate university students using the six dimensions of ESE developed by De Noble et al. (1999) found a generally high level of ESE, but low levels of perceptions of coping with unexpected challenges in business. In the same vein, Pihie and Bagheri's (2011) empirical study with Malay vocational and technical secondary school students found a positive score in the students' ESE aspect of developing new products and market opportunities. The study also found that the students had moderately low perceptions of coping with unexpected business challenges. Pihie and Bagheri's (2010) earlier survey of 3,000 students at vocational and technical secondary schools in Malaysia found that students had low perceptions of all ESE dimensions. Due to the mixed results, and the multidimensional

nature of ESE, this study sought to determine entrepreneurial readiness through the lens of ESE task phases to understand individuals' phase of weakness or strength.

Numerous studies have also examined the relationship between ESE and entrepreneurial readiness. Darmanto and Yuliari (2018) submit that ESE is a strong predictor of entrepreneurship readiness. Islami et al. (2017) concluded that higher self-efficacy can increase entrepreneurship readiness among students at vocational high schools in Indonesia. Memon et al. (2019) established a strong association between ESE and other components of entrepreneurial readiness such as instrumental readiness, risk propensity, entrepreneurial knowledge, and entrepreneurial experiences. Using a multi-construct approach to ESE, Nowiński et al. (2019) show that all components of ESE mediated the influence of entrepreneurship education on entrepreneurship intention. However, there is dearth of research on ESE task phases for entrepreneurial readiness in Nigeria's TVET institutions. Maritz and Brown (2013) suggest that further research is necessary to identify other factors that influence and interact with ESE.

Figure 2 depicts the interaction between ESE task phases as determinants of entrepreneurial readiness. The searching phase deals with idea identification or identification of business opportunities or new market opportunities. The planning phase assesses the ability to translate the business idea into a business plan or proposal. The marshaling phase determines the ability to gather financial, material, and human resources to execute the new business, and the implementing phase is the actual establishment of the business and its growth and sustainability.

Research Methods

This research study adopted the positivist research paradigm. Positivists believe that the existence of knowledge is established through its measurement by a reliable instrument (Muijs, 2010), and that truth is upheld through empirical interpretations. The impact of multi-construct ESE on students' entrepreneurial readiness was measured by a statistical instrument to objectively understand true knowledge. A descriptive and quantitative design was adopted. Data gathered by means of a questionnaire was appropriate to empirically determine the impact of ESE dimensions (Nowiński et al., 2019) on students' entrepreneurial readiness. Previous research studies on ESE dimensions adopted a quantitative approach to determine students' entrepreneurial behavior (Pihie & Bagheri, 2011; Setiawan, 2014). The study site was Lagos Metropolis, which is the major commercial hub in Nigeria that absorb most graduates from TVET institutions. It is one of the few technologically advanced cities in Africa that demands technical and vocational skills. Quota sampling was used to select three of the seven TVET institutions in Lagos state. The criteria included the national and the state level, years of establishment, and business location. The three institutions selected expressed interest in participating

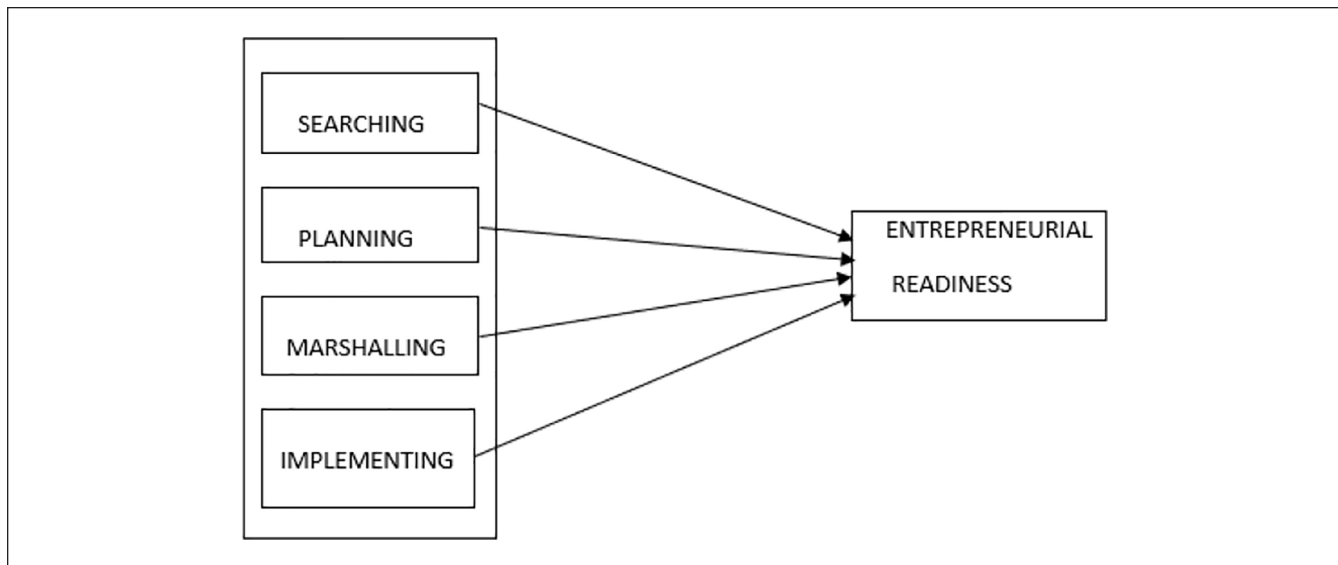


Figure 2. ESE task phases.

Source. Authors' compilation.

in the study and readily granted the researchers access. Convenience sampling, which is a non-probability sampling technique, was adopted to select the study sample from a population of 1,212 exit level students from the three TVET institutions. Despite concerns in relation to generalizability, convenience sampling has been used in numerous entrepreneurship studies (Nowiński et al., 2019; Wilson et al., 2007).

Taro's equation model was used to determine a total sample of 301 that was drawn from a sample frame of 1,212 exit level students. The respondents were exit level students that had undergone 3 years of entrepreneurship courses, with the expected entrepreneurial skills for starting a business after graduation. Three hundred and one questionnaires were administered, but 289 questionnaires were valid for this study, which represents a 96% response rate, higher than the minimum recommended rate of 60% suggested by Johnson and Wislar (2012).

In measuring the independent variable (ESE), a multidimensional construct developed by McGee et al. (2009), which consists of four sub-constructs (searching, planning, marshaling, and implementing) was adapted. The construct was rated by the students on a 6-point Likert scale (ranging from "strongly disagree" to "strongly agree"). Entrepreneurial readiness was measured by adapting the instrument developed by Coduras et al. (2016) to measure an individual's entrepreneurial readiness. The dependent variable was also measured on a 6-point Likert scale with the same rating scale as the independent variable. The reliability measurement revealed that the ESE sub-constructs have highly reliable Cronbach Alphas above .7 with adequate discriminant validity. Pearson correlation coefficient and multiple regression analysis were conducted to determine the relationship and level of influence among the variables.

Table 1 presents the demographic characteristics of the exit level students from the selected TVET institutions.

As shown in Table 1, 159 of the 289 students were male, representing 55% and there were 130 female students, representing 45% of the sample. The majority (83%) of the respondents were below the age of 20, while 15.6% were between the ages of 20%, 24%, and 0.7% were aged 25 to 29, and 0.7% were 35 and older. According to Nigeria's National Youth Policy (2001) (Oduwale, 2015), the age range for the youth in Nigeria is 18 to 35. Thus, 99.03% of the participants were classified as youth. The study participants were exit level students from 11 disciplines, with 30.1% from business studies, followed by computer science and engineering (17.6%), automobile engineering (8.3%), catering (9%), graphic arts (9%), mechanical craft engineering (8.3%), electrical and electronic engineering (0.7%), bricklaying and concrete (0.7%), garment making (0.7%), welding and fabrication (5.9%), and plumbing and fitting (5.9%).

Results

Since the dependent variable was modified, there was a need to conduct a factor analysis using SPSS version 25 for data validity and reliability.

As shown in Table 2, the Cronbach Alpha values for all the sub-constructs of ESE, and the entrepreneurial readiness construct ranged between 0.731 and 0.902. Thus, all the sub-constructs of ESE, and the entrepreneurial readiness construct exceeded the recommended requirement of 0.7 (Wilson, 2014). The Kaiser-Meyer-Olkin measures for the independent variables and dependent variable were all higher than the recommended threshold of 0.5. This means that the

sample from which the data were collected was adequate. Furthermore, Bartlett's test of sphericity revealed that all the constructs were statistically significant. This validates the sampling adequacy of the data. However, item 4 was removed from the scale "implementing," and item 1 was dropped from the scale entrepreneurial readiness. Both items produced insignificant factor loading values of below 0.4. Thereafter, Pearson Product-Moment Correlation (PPMC) was employed to determine the link between the independent variables and the dependent variable.

Table 3 presents the correlation analysis between ESE and entrepreneurial readiness. The bivariate analysis shows that all the components of ESE have a positive and significant association with entrepreneurial readiness. Entrepreneurial readiness shows correlation with ESE business searching $r = .636$, $N = 288$, $p < .001$, ESE business planning $r = .638$, $N = 288$, $p < .001$, ESE business marshaling $r = .620$, $N = 288$, $p < .001$, and ESE business implementing $r = .687$, $N = 288$, $p < .001$. This finding suggests that an increase in ESE will increase students' entrepreneurial readiness to identify business opportunities, translate business ideas to achievable plans, assemble economic resources, and achieve business management growth. It also shows that ESE is a determinant of entrepreneurial readiness.

The conceptual model was tested by examining the link between the independent variables and the dependent variable. To achieve this fit, there is a need to verify the possibility of multi-collinearity, as shown in Table 4 below.

The results in Table 4 indicate that the variance inflation factors (VIF) are well below 5, with the highest at 3.246 and high tolerance values (tolerance > 0.10). Hence, multi-collinearity is not an issue, and the regression analysis results can be relied upon. The dependent variable was regressed on the four sub-constructs of ESE to determine the level of prediction, as shown in Table 5 below.

Table 5 shows the outcome of the regression analysis with the value R^2 as .528, which means that ESE explained 52.8% of the variance in entrepreneurial readiness from the model. On aggregate, there is a significant linear association between ESE and entrepreneurial readiness $F(4,283) = 79.028$, $p < .05$. The regression model on ESE searching reveals a significant association with entrepreneurial readiness at $\beta = .186$, $t(287) = 2.764$, $p < .05$. This implies that the students' entrepreneurial skills for opportunity identification or idea development positively contribute to their entrepreneurial readiness for start-ups. This result suggests that we accept H1. The standardized Beta coefficient for ESE planning shows a significant impact on the students' entrepreneurial readiness toward business planning skills $\beta = .149$, $t(287) = 2.099$, $p < .05$. This outcome supports H2. However, ESE marshaling $\beta = .131$, $t(287) = 1.953$, $p > .05$ reveals an insignificant association with entrepreneurial readiness while holding other variables constant. The students' entrepreneurial skills to gather economic resources do not contribute to their entrepreneurial readiness. These findings

Table 1. Students' Demographic Data.

	Frequency	%
Gender		
Male	159	55
Female	130	45
Total	289	100
Marital status		
Single	288	99.7
Married	1	0.3
Total	289	100
Age		
<20	240	83.0
20–24	45	15.6
25–29	2	0.7
>35	2	0.7
Total	289	100
Department		
Business studies	87	30.1
Computer/engineering	51	17
Automobile engineering	41	14.2
Catering	26	9
Graphic arts	26	9
Mechanical craft engineering	24	8.3
Electrical/electronics	2	0.7
Bricklaying/concrete	2	0.7
Garment making	2	0.7
Welding and fabrication	17	5.9
Plumbing and fitting	11	3.8
Total	289	100

Source. Authors' compilation.

Table 2. Factor Analysis of Variables.

Construct	Mean	SD	Cronbach α	KMO	Bartlett's test
1. ESE searching	5.00	0.817	.831	0.816	$p < .05$
2. ESE planning	4.91	0.825	.731	0.731	$p < .05$
3. ESE marshaling	4.86	0.868	.796	0.801	$p < .05$
4. ESE implementing	4.96	0.801	.837	0.874	$p < .05$
5. Entrepreneurial readiness	4.88	0.803	.902	0.922	$p < .05$

Source. Authors' compilation.

support those of Mueller and Goić (2003) on undergraduate business students in Croatia and the US. The authors found that all ESE task phases (searching, planning, and implementing) were significantly associated with the students' entrepreneurial orientation, but ESE marshaling was lower among Croatian students due to lack of venture creation resources skills. Based on this result, we reject H3.

On the other hand, ESE implementing shows a significant and positive contribution to the students' entrepreneurial readiness $\beta = .339$, $t(287) = 4.602$, $p < .05$. Furthermore, the

Table 3. Pearson Correlation Coefficient.

Variables	Mean	SD	1	2	3	4	5
1. ESE searching	4.997	0.816	1				
2. ESE planning	4.914	0.825	.735 ^a	1			
3. ESE marshaling	4.860	0.867	.699 ^a	.720 ^a	1		
4. ESE implementing	4.961	0.801	.738 ^a	.765 ^a	.747 ^a	1	
5. Entrepreneurial readiness	4.875	0.803	.636 ^a	.638 ^a	.620 ^a	.687 ^a	1

Source. Authors' compilation.

^aCorrelation is significant at the .001 level (two-tailed).

Table 4. Test of Multi-Collinearity (Collinearity Statistics).

	B	SE	T	Sig.	Tolerance	VIF
Constant	.971	0.223	4.357	0.000		
ESE searching	.183	0.066	2.764	0.006	0.368	2.717
ESE planning	.145	0.069	2.099	0.037	0.331	3.021
ESE marshaling	.121	0.062	1.953	0.052	0.371	2.694
ESE implementing	.340	0.074	4.602	0.000	0.308	3.246

Source. Authors' compilation.

Table 5. ESE as a Predictor of Entrepreneurial Readiness. .

Variables	B	β	t	p-Value	R ²	F	df	p-Value
Constant	.971		4.357	<.0005				
ESE searching	.183	.186	2.764	.006				
ESE planning	.145	.149	2.099	.037	.528	79.028	4, 283	<.0005
ESE marshaling	.121	.131	1.953	.052				
ESE implementing	.340	.339	4.602	<.0005				

Source. Authors' compilation.

Predictor: ESE searching, ESE planning, ESE marshaling, ESE implementing.
Dependent Variable (DV): Entrepreneurial readiness.

students' entrepreneurial skills to initiate a new business start-up significantly influence their entrepreneurial readiness. This result is not surprising as many studies have identified ESE as a strong predictor of business start-ups (Maritz & Brown, 2013; Memon et al., 2019; Olugbola, 2017). Therefore, H4 is accepted.

This study further investigated the gender difference in the link between ESE dimensions and entrepreneurial readiness. The following table presents the multiple regression model for male and female perceptions of ESE dimensions and entrepreneurial readiness.

The findings in Table 6 show that ESE was able to predict 52.3% and 51.5% variance in male and female students' entrepreneurial readiness, respectively. In similar vein, on aggregate, ESE shows a significant association with both male and female students' entrepreneurial readiness $F(4,157) 43.975, p < .0005$, and $F(4,129), 35.224, p < .0005$, respectively. On the one hand, except for ESE marshaling $\beta = .081, t(161) = 0.990, p < .05$, all the other components of ESE indicate a significant relationship with entrepreneurial

readiness for the male students (ESE searching $\beta = .223, t(161) = 2.484, p < .05$; ESE planning $\beta = .189, t(161) = 2.090, p < .05$; ESE implementing $\beta = .327, t(161) = 3.539, p < .05$). On the other hand, apart from ESE implementing $\beta = .348, t(133) = 2.948, p < .05$, all the components of ESE show an insignificant relationship with the female students' entrepreneurial readiness.

Discussion of Findings

This study aimed to develop entrepreneurial readiness through the ESE task phases process. One of its significant contributions is the adoption of ESE dimensions to empirically determine TVET students' entrepreneurial readiness in a developing context like Nigeria. The findings offer empirical support for business creation processes. The bivariate analysis reveals that on aggregate, ESE positively and significantly correlates with entrepreneurial readiness. This result agrees with those of Islami et al. (2017) which revealed that self-efficacy is an incremental factor of entrepreneurial

Table 6. Gender Differences Between ESE and Entrepreneurial Readiness. .

Variables	B	β	t	p-Value	R ²	F	df	p-Value
Male								
Constant	.628		1.931	<.0005				
ESE searching	.238	.223	2.484	.014				
ESE planning	.184	.189	2.090	.038	.523	43.975	4,157	<.0005
ESE marshaling	.079	.081	.990	.324				
ESE implementing	.357	.327	3.539	<.0005				
Female								
Constant	1.231		3.853	<.0005				
ESE searching	.151	.163	1.595	.113				
ESE planning	.083	.085	.749	.455	.515	35.224	4,129	<.0005
ESE marshaling	.178	.199	1.791	.076				
ESE implementing	.328	.348	2.948	.004				

Source. Authors' compilation.

Predictor: ESE searching, ESE planning, ESE marshaling, ESE implementing.

Dependent Variable (DV): Entrepreneurial readiness.

readiness among students at vocational high schools in Indonesia. Similarly, Memon et al. (2019) demonstrate that ESE had a strong significant influence on all components of entrepreneurial readiness, such as instrumental readiness and risk propensity.

The causal relationship reveals that ESE searching has a significant association with entrepreneurial readiness. This implies that the students' entrepreneurial skills for opportunity identification or idea development positively contribute to their entrepreneurial readiness for start-ups. In similar vein, Dahalan et al. (2013) concluded that business searching opportunity significantly impacts entrepreneurial readiness among men and women. Similarly, ESE planning shows a significant association with entrepreneurial readiness. This suggests that ESE contributes to students' planning or idea translation skills. In contrast, ESE marshaling shows an insignificant association with entrepreneurial readiness. This implies that skills to assemble financial and material resources for business creation are lacking among the students. Mueller and Goić (2003) found that all parts of ESE task phases (searching, planning, and implementing) were positively associated with students' entrepreneurial orientation, but ESE marshaling was not significant. The challenge of resource gathering skills has continued to generate global concern among young minds.

The multiple regression model revealed a positive and significant relationship on aggregate between ESE and entrepreneurial readiness. It showed that ESE explained 52.8% of the variance in entrepreneurial readiness. This result affirms previous studies' (Darmanto & Yuliari, 2018; Memon et al., 2019) findings that a strong relationship exists between ESE and other components of entrepreneurial readiness. The significant and positive effect of business searching (opportunity identification) on entrepreneurial readiness points to the crucial reasons why young minds engage in entrepreneurial activities. The empirical findings on ESE searching show

that opportunity identification can be measured, and there are individual differences in terms of opportunity identification or business idea which can be influenced through entrepreneurship education (Dahalan et al., 2013; Olugbola, 2017; Setiawan, 2014). Furthermore, the positive impact of developing an achievable business plan on entrepreneurial readiness for new business creation is evident in this study. The study affirmed that business planning is an essential component of business start-ups that must be taken seriously in entrepreneurship education (Nowiński et al., 2019).

Our findings add to the few empirical studies that show that entrepreneurs can be made. The finding that ESE marshaling has an insignificant effect on students' entrepreneurial readiness is one of the first such empirical findings in Africa within the context of ESE. It suggests that students' deficiency in marshaling skills may be one of the challenges of entrepreneurship, which leads to increasing youth unemployment in Nigeria. This further suggests the need for curriculum reform to address topics on gathering or raising financial and human resources, and other business creation resources skills. The problem of raising business resources for a new start-up has been an on-going challenge for many prospective entrepreneurs due to the scarce economic resources available to SMEs (Mueller & Goić, 2003; Nwosu & Ukoha, 2013; Osotimehin et al., 2012).

With regard to the gender analysis, the regression analysis shows that ESE marshaling did not influence male and female students' entrepreneurial readiness. While ESE searching, ESE planning, and ESE implementing showed a significant relationship with the male students' entrepreneurial readiness, the female students' entrepreneurial readiness was only influenced by ESE implementing. These variances may be due to the challenge of gender inequality in the educational system in Africa (Ganiyu & Adeniyi, 2020). For instance, in Africa, family demands for girls to stay at home are higher than for boys (Aikman & Unterhalter, 2005) as the

former are preferred for a specific kind of child labor (Ombati, 2013). This affects the girl child's learning and academic consistency. The study also affirmed the problem of enrollment disparity (male=161, female=133), with millions of girls in Nigeria denied access to education (Global Education Monitoring Report, 2016).

A major contribution of this study is the identification of the lack of resource gathering skills as a probable cause of poor business creation among young Nigerians. Related skills on gathering economic resources for business are lacking among the exit level students of selected TVET institutions, negatively impacting their entrepreneurial readiness for venture creation. This could be one of the many challenges affecting start-ups among graduates of TVET institutions in Nigeria. Our research findings also indicate that, it is not sufficient to acquire technical and vocational skills; core entrepreneurship training should be integrated with TVET curricula to foster entrepreneurial readiness among the Nigerian youth (Lame & Yusoff, 2013). Furthermore, our results indicate that executing business plans is critical to the growth and survival of new business start-ups. They show that ESE implementing or business management skills have the strongest impact on students' entrepreneurial readiness. This is in line with Dardiri et al.'s (2019) assertion that self-efficacy is a strong motivator of entrepreneurial readiness in the era of the fourth Industrial Revolution.

The growth of any business hinges on the entrepreneur's decision-making, problem-solving, and competitive skills. Other components of ESE depend on implementing skills for a successful business enterprise. As the last phase, it seems to be the most important of all, without which the others are dormant.

Theoretical Implications

This study is one of the first efforts to explicitly adopt nascent entrepreneur measures to determine students' ESE strengths and weaknesses within the context of entrepreneurial readiness in Nigeria. The findings reveal the insignificant impact of resource gathering skills on entrepreneurial readiness. The resource dependency theory posits that organizations are embedded in webs of economic interdependencies and social connections with entities that have different motives, philosophies, and interests (Drees & Heugens, 2013; Pfeffer & Salancik, 1978). To Marshall economic resources, they must rely on their relationships with other entities, including competitors, suppliers, creditors, customers, and governments (Barringer & Harrison, 2000; Pfeffer & Salancik, 1978). Therefore, entrepreneurship educators should incorporate TVET institutions with the entrepreneurship ecosystem in Nigeria in order to acquire resources for students to initiate and sustain new business start-ups. Numerous studies (Villanueva et al., 2012) have demonstrated that a newly created business is prone to resource dependency and its behavior can be comprehended through resource dependency theory (Roundy & Bayer, 2019).

This study also contributes to the debate on the link between a multi-dimensional construct of ESE within a developing context. To the researchers' knowledge, this is one of the first studies to investigate multi-dimensional construct of ESE within the context of TVET institutions in Nigeria. Most studies on ESE dimensions, focus on the six dimensions developed by De Noble et al. (1999) with major emphasis on entrepreneurial intention. Furthermore, very few studies have empirically investigated ESE dimensions among students of TVET institutions in Africa. The analysis provides support for a conceptual framework on ESE's impact on entrepreneurial readiness. It also revealed the importance of entrepreneurial skills, such as the ability to gather business resources for start-ups.

Practical Implications

This study demonstrated that resource gathering skills are required to support vocational or technical skills for new start-ups among exit level students in TVET institutions in Nigeria. Therefore, entrepreneurship educators, and curriculum developers should incorporate resource gathering into entrepreneurship modules to stimulate business creation among graduates of the country's TVET institutions. The adoption of ESE dimensions as a measure of entrepreneurial competence could assist assessment of the specific stage of strength and weakness of an individual.

Limitations and Future Research

This study examined multi-dimensional ESE as the predicting variable. Future research could adopt ESE dimensions as the mediating factor using Structural Equation Modeling to better comprehend the probable interactions' effect on entrepreneurial readiness in a developing context. The study was limited to academic institutions' contributions to fostering new start-ups. Future studies could consider the impact of the entrepreneurial ecosystem in acquiring economic resources to encourage business creation among the youth.

Conclusion

The study's main contribution is the development of entrepreneurial readiness toward new business start-ups through the lens of multi-construct ESE in a developing context. Development of business start-up skills would enable graduates of TVET institutions to become self-employed, reduce youth unemployment, and contribute to the growth of the economy. It is recommended that TVET institutions integrate with the entrepreneurial ecosystem such as private industries, experienced and successful entrepreneurs, government, etc., to support student entrepreneurs in terms of skills and funds. There is also a need to test the study's conceptual model on university students in order to justify the generalizability of the findings.

Appendix

Items Used to Measure Each Factor

Items	Source
I am confident that I have the ability to identify a good business opportunity in my environment	ESE searching (McGee et al., 2009)
I am confident that I have the ability to identify the need for new products or services	
I am confident that I have the ability to identify a new product in order to satisfy customers' needs	
I am confident that I have the ability to come up with a new idea for a product or service	
I am confident that I have the ability to identify business opportunity from people's needs	
I am confident that I can develop my idea into a business plan	ESE planning (McGee et al., 2009)
I am confident that I have the ability to design an effective marketing/advertising strategy for a new product or service	
I am confident that I have the ability to determine the right workers and environment for my business idea.	
I am confident I have the ability to clearly explain my business plan both in writing and verbally	
I am confident I have the ability to influence people to believe in my new business	ESE marshalling (McGee et al., 2009)
I am confident that I have the ability to raise money to start a business	
I am confident that I can convince people to make financial contributions towards starting my business	
I am confident that I have the ability to motivate people to partner with me	
I am confident that I have the ability to convince people to commit their time and energy to my business	
I am confident I have the ability to start a small business with limited resources	ESE implementing (McGee et al., 2009)
I am confident I have the ability to manage my financial resources	
I am confident that I can satisfy my customers by addressing their needs	
I am confident I have the ability to sustain my business for more than 5 years	
I am confident that I have the ability to use new technology that will make my business competitive	
I am confident that I have the ability to deal effectively with day-to-day problems and crises	Entrepreneurial readiness (Coduras et al., 2016) adapted
I am confident that I have the ability to face challenges I come across in my business	
I am confident I have the ability to make my unique idea a reality	
I believe I have the technical skills needed to run a business in the 21st century	
I can improve on an existing technology by creating a better version to satisfy peoples' needs	
I am able to start a new business by rendering services or develop a product to meet peoples' demands	
If I fail at something, I have the ability and endurance to try again until I get a result	
I prefer to own a business rather than working for other people	
I believe I have the skills to create business opportunity in any country	
I am able to advertise any product or service and network through the social media platforms	
I am able to source for funds to sustain a business beyond 5 years	
I am able to manage different people to achieve my goal	
I am able to turn a business idea into a new start-up	
I am prepared to start a business of my own	
I can cope with multiple demands on me at the same time	
I am able to use the computer software that applies to my technical field	

Authors' compilation

Exploratory Factor Analysis

An exploratory factor analysis was performed for the purpose of dimension reduction so as to have a more parsimonious representation that will be used as a composite measure for the subsequent analyses. In performing exploratory factor analysis, the study used the principal components extraction method.

Exploratory Factor Analysis

Items	Components				
	1	2	3	4	5
ESEBUS_1	0.810	0.372	0.299	0.194	0.188
ESEBUS_3	0.798	0.456	0.388	0.195	-0.162
ESEBUS_2	0.770	0.132	0.284	0.235	0.235
ESEBUS_4	0.755	0.256	0.241	0.081	0.147
ESEBUS_5	0.731	0.204	0.293	-0.114	-0.004
ESEPLN_3	0.201	0.813	-0.081	0.008	0.327
ESEPLN_2	0.412	0.738	-0.085	0.156	0.289
ESEPLN_4	0.168	0.727	0.023	0.011	0.094
ESEPLN_1	0.243	0.704	0.215	0.140	0.258
ESEMSH_2	0.140	0.151	0.722	0.221	-0.112
ESEMSH_3	0.205	0.171	0.766	0.235	0.033
ESEMSH_5	0.198	0.347	0.738	0.400	0.021
ESEMSH_1	0.091	0.355	0.725	0.301	-0.212
ESEMSH_4	0.190	0.318	0.712	0.209	0.131
ESEIMP_8	0.466	0.140	0.159	0.741	0.106
ESEIMP_2	0.412	0.492	0.237	0.735	-0.22
ESEIMP_7	0.239	0.359	0.020	0.721	0.305
ESEIMP_1	0.157	0.194	0.367	0.713	0.120
ESEIMP_3	0.228	0.195	0.209	0.705	0.183
ESEIMP_5	0.198	0.290	0.136	0.695	0.104
ESEIMP_6	0.201	0.268	-0.005	0.657	0.275
ENTR_2	-0.183	0.160	0.131	0.274	0.742
ENTR_3	0.056	0.018	0.073	0.422	0.730
ENTR_8	0.096	0.210	0.166	0.259	0.729
ENTR_7	0.271	0.273	-0.114	0.095	0.725
ENTR_10	0.001	0.073	0.104	0.346	0.717
ENTR_5	0.417	0.252	-0.041	0.098	0.700
ENTR_6	0.060	0.120	0.091	0.176	0.700
ENTR_13	0.009	0.164	0.137	0.115	0.687
ENTR_12	0.094	0.207	0.336	0.231	0.686
ENTR_9	0.007	0.292	0.348	0.411	0.685
ENTR_4	0.183	0.231	0.112	0.215	0.657
ENTR_11	0.040	0.077	0.129	0.008	0.593

Note. ESEBUS=entrepreneurial self-efficacy business searching; ESEPLN=entrepreneurial self-efficacy business planning; ESEMSH=entrepreneurial self-efficacy business marshaling; ESEIMP=entrepreneurial self-efficacy business implementing; ENTR=entrepreneurial readiness. The Bold values are the factors loadings of each variables.

Except for item 4 which value is lower than 0.4 threshold in ESEIMP, all the items for ESE had factor loadings greater than 0.40, which means that the sampling adequacy is satisfactory. For entrepreneurial readiness scale, item one was dropped because it had an insignificant factor loading value less than 0.40.

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Ethical Clearance

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number HSSREC/00000289/2019).

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References

- Abiodun, E. A. (2020). Entrepreneurial self-efficacy, entrepreneurial orientation, and institutional environment: SME in Nigeria. *SCMS Journal of Indian Management*, 17(1), 16–27. <https://doi.org/10.4018/978-1-7998-7951-0.ch012>
- Adeniyi, A. O., & Ganiyu, I. O. (2021). Reshaping education and entrepreneurial skills for Industry 4.0. In A.O. Ayandibu, (Ed.), *Reshaping entrepreneurship education with strategy and innovation* (pp. 64–77). IGI Global.
- Adesugba, M., & Mavrotas, G. (2016). *Youth employment, agricultural transformation, and rural labour dynamics in Nigeria* (IFPRI Discussion Paper 01579), 1–36. International Food Policy Research Institute (IFPRI). <http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/130962>
- Aikman, S., & Unterhalter, E. (Eds.). (2005). *Beyond access: Transforming policy and practice for gender equality in education*. Oxfam.
- Akueshi, N. N., Njoku, C. C., & Udeji, N. C. (2014). Education adjustment programme: A case for entrepreneurship for enterprise-readiness and employability of the products of the Nigerian education system. *Journal of Teacher Perspective*, 8(3), 1–16.
- Audu, R., Kamin, Y. B., & Balash, F. (2013). Technical vocational education: As a veritable tool for eradicating youth unemployment. *IOSR Journal of Humanities and Social Science*, 8(2), 10–17.
- Bandura, A., Freeman, W. H., & Lightsey, R. (1999). Self-efficacy: The exercise of control. *Journal of Cognitive Psychotherapy*, 13(2), 158–166. <https://doi.org/10.1891/0889-8391.13.2.158>

- Barbosa, S. D., Gerhardt, M. W., & Kickul, J. R. (2007). The role of cognitive style and risk preference on entrepreneurial self-efficacy and entrepreneurial intentions. *Journal of Leadership & Organizational Studies*, 13(4), 86–104.
- Barringer, B. R., & Harrison, J. S. (2000). Walking a tightrope: Creating value through interorganizational relationships. *Journal of management*, 26(3), 367–403.
- Bomani, M., Fields, Z., & Derera, E. (2019). The role of higher education institutions in the development of SMEs in Zimbabwe. *Business and Management Studies: An International Journal*, 11(2), 1–15.
- Boyd, N. G., & Vozikis, G. S. (1994). The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, 18(4), 63–77.
- Cadenas, G. A., Cantú, E. A., Lynn, N., Spence, T., & Ruth, A. (2020). A programmatic intervention to promote entrepreneurial self-efficacy, critical behavior, and technology readiness among underrepresented college students. *Journal of Vocational Behavior*, 116, 103350. <https://doi.org/10.1016/j.jvb.2019.103350>
- Cao, Z. (2018). Entrepreneurial ecosystems in emerging economies (E4s): What is similar and what is different? *Academy of Management Proceedings*, 2018(1), 17341. <https://doi.org/10.5465/ambpp.2018.17341abstract>
- Chatterjee, N., & Das, N. (2015). Key psychological factors as predictors of entrepreneurial success: A conceptual framework. *Academy of Entrepreneurship Journal*, 21(1), 102–114.
- Chawla, N. T., & Bhatia, H. (2020). A study on the influence of education and demographic variables on the entrepreneurial self efficacy (ESE). *Adhyayan: A Journal of Management Sciences*, 10(2), 64–74.
- Chen, C. C., Green, P. G., & Crick, A. (1998). The self-efficacy expectations and occupational preferences of females and males. *Journal of Business Venturing*, 13(4), 295–316.
- Chou, C. M., Shen, C. H., Hsiao, H. C., Chang, H. T., & Chen, Y. J. (2011). Entrepreneurial self-efficacy on Pragmatic Learning of Business Practice. In *2011 IEEE 18th International Conference on Industrial Engineering and Engineering Management* (pp. 319–322). IEEE.
- Coduras, A., Saiz-Alvarez, J. M., & Ruiz, J. (2016). Measuring readiness for entrepreneurship: An information tool proposal. *Journal of Innovation & Knowledge*, 1(2), 99–108.
- Cox, L. W., Mueller, S. L., & Moss, S. E. (2002). The impact of entrepreneurship education on entrepreneurial self-efficacy. *International Journal of Entrepreneurship Education*, 1(1), 229–245.
- Cueto, B., Mayor, M., & Suárez, P. (2015). Entrepreneurship and unemployment in Spain: A regional analysis. *Applied Economics Letters*, 22(15), 1230–1235.
- Dahalan, N., Jaafar, M., & Rosdi, S. A. M. (2013). Local community readiness in entrepreneurship: Do gender differ in searching business opportunity. *Procedia: Social and Behavioral Sciences*, 91, 403–410.
- Dardiri, A., Irsyada, R., & Sugandi, M. (2019). *Contributions of understanding of entrepreneurship, interest in entrepreneurship, and self-efficacy to entrepreneurial readiness in the age of the industrial revolution 4.0* [Conference session]. 2nd International Conference on Vocational Education and Training (ICOVET 2018), 42, 23–26. Atlantis Press.
- Darmanto, S., & Yuliari, G. (2018). Mediating role of entrepreneurial self-efficacy in developing entrepreneurial behavior of entrepreneur students. *Academy of Entrepreneurship Journal*, 24(1), 1–14.
- Darmasetiawan, N. K. (2019). *Readiness and entrepreneurial self-efficacy: Actors of SMEs snake-fruit processed products in the conduct of e-business* [Conference session]. 5th Annual International Conference on Management Research (AICMaR 2018), 1–5. Atlantis Press.
- De Noble, A., Jung, D., & Ehrlich, S. (1999). Entrepreneurial self-efficacy: The development of a measure and its relationship to entrepreneurial action. *Frontiers of Entrepreneurship Research*, 115, 73–87.
- Drees, J. M., & Heugens, P. P. (2013). Synthesizing and extending resource dependence theory: A meta-analysis. *Journal of Management*, 39(6), 1666–1698.
- Edokpolor, J. E., & Owenbiugie, R. O. (2017). Technical and vocational education and training skills: An antidote for job creation and sustainable development of Nigerian economy. *Problems of Education in the 21st Century*, 75(6), 535–549.
- Eniola, A. A. (2020). Entrepreneurial self-efficacy and orientation for SME development. *Small Enterprise Research*, 27, 125–145.
- Fagge, B. G. (2017). 21st century global changes in education: Entrepreneurship education and TVET for sustainable development. *Journal of Human Capital Development*, 10(2), 75–81.
- Fayolle, A. (2013). Personal views on the future of entrepreneurship education. *Entrepreneurship and Regional Development*, 25(7–8), 692–701. <https://doi.org/10.1080/08985626.2013.821318>
- Fayolle, A. (2018). Personal views on the future of entrepreneurship education. In L. Fayolle (Ed.), *A research agenda for entrepreneurship education* (pp. 127–138). Edward Elgar Publishing.
- Ganiyu, I. O., & Adeniyi, A. O. (2020). Wicked problem and gender inequality in the educational sector. In Z. Fields (Ed.), *Handbook of research on using global collective intelligence and creativity to solve wicked problems* (pp. 157–174). IGI Global.
- Global Education Monitoring Report. (2016). *Parity*. <http://gem-report-2016.unesco.org/en/chapter/parity/>
- Global Youth Employment Trends. (2020). https://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms_737648.pdf
- Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: Can entrepreneurship be taught? part I. *Education + Training*, 47(2), 98–111. <https://doi.org/10.1108/00400910510586524>
- Henry, G. T., & Mark, M. M. (2003). Beyond use: Understanding evaluation's influence on attitudes and actions. *American Journal of Evaluation*, 24(3), 293–314. <https://doi.org/10.1177/109821400302400302>
- Hermawan, R. W., Soetjipto, B. E., & Rahayu, W. P. (2016). The effect of entrepreneurial self-efficacy and locus of control on entrepreneurship interest through entrepreneurship literacy. *IOSR Journal of Business and Management*, 18(2), 141–148.
- Ibrahim, N. A., & Lucky, E. O. I. (2014). Relationship between entrepreneurial orientation, entrepreneurial skills, environmental factor and entrepreneurial intention among Nigerian students in UUM. *Entrepreneurship and Innovation Management Journal*, 2(4), 203–213.

- Islami, P. A. F., Elmunsyah, H., & Muladi. (2017). *Contribution entrepreneurial knowledge, skills competence, and self-efficacy to student entrepreneurship readiness of multimedia expertise at vocational high school in Malang* [Conference session]. AIP Conference Proceedings (pp. 200–252). AIP Publishing LLC.
- Johnson, T. P., & Wislar, J. S. (2012). Response rates and non-response errors in surveys. *The Journal of the American Medical Association*, 307(17), 1805–1806. <https://doi.org/10.1001/jama.2012.3532>
- Kickul, J., & D'Intino, R. S. (2005). Measure for measure: Modelling entrepreneurial self-efficacy onto instrumental tasks within the new venture creation process. *New England Journal of Entrepreneurship*, 8(2), 6–22. <https://digitalcommons.sacredheart.edu/neje/vol8/iss2/6/>
- Kisubi, M. K. (2021). Undergraduate students' entrepreneurial attitude and self-employment intentions: The conditional effect of entrepreneurial self-efficacy. *SEISENSE Business Review*, 1(2), 48–58. <https://doi.org/10.33215/sbr.v1i2.626>
- Lame, S. M., & Yusoff, W. F. (2013, December 5). *The perception of students towards entrepreneurship courses: An empirical study of Nigerian polytechnics students* [Conference session]. 2nd International Conference on Technology Management, Business and Entrepreneurship, Melaka, Malaysia.
- Lau, V. P., Dimitrova, M. N., Shaffer, M. A., Davidkov, T., & Yordanova, D. I. (2012). Entrepreneurial readiness and firm growth: An integrated ETIC and EMIC approach. *Journal of International Management*, 18(2), 147–159.
- Lebusa, M. J. (2011). Does entrepreneurial education enhance under-graduate students' entrepreneurial self-efficacy? A case at one University of Technology in South Africa. *China-USA Business Review*, 10(1), 908–923.
- Mahadea, D., & Kaseeram, I. (2018). The relationship between unemployment, entrepreneurship, rising income in South Africa: An exploratory study. *African Journal of Business and Economic Research*, 13(2), 203–226.
- Maigida, J. F., Saba, T. M., & Namkere, J. U. (2013). Entrepreneurial skills in technical vocational education and training as a strategic approach for achieving youth empowerment in Nigeria. *International Journal of Humanities and Social Science*, 3(5), 303–310.
- Maritz, A., & Brown, C. R. (2013). Illuminating the black box of entrepreneurship education programs. *Education + Training*, 55(3), 234–252. <https://doi.org/10.1108/00400911311309305>
- McGee, J. E., Peterson, M., Mueller, S. L., & Sequeira, J. M. (2009). Entrepreneurial self-efficacy: Refining the measure. *Entrepreneurship Theory and Practice*, 33(4), 965–988.
- Memon, M., Soomro, B. A., & Shah, N. (2019). Enablers of entrepreneurial self-efficacy in a developing country. *Education + Training*, 61(6), 684–699. <https://doi.org/10.1108/et-10-2018-0226>
- Mueller, S. L., & Goić, S. (2003). East-west differences in entrepreneurial self-efficacy: Implications for entrepreneurship education in transition economies. *International Journal for Entrepreneurship Education*, 1(4), 613–632.
- Muijs, D. (2010). *Doing quantitative research in education with SPSS*. SAGE Handbook.
- Mwiya, B. M. K., Wang, Y., Kaulungombe, B., & Kayekesi, M. (2019). Exploring entrepreneurial intention's mediating role in the relationship between self-efficacy and nascent behaviour: Evidence from Zambia, Africa. *Journal of Small Business and Enterprise Development*, 26(4), 466–485.
- National Youth Policy. (2001). *Nigeria documents*. Retrieved from: <https://nigeriandocuments.blogspot.com/p/national-youth-policy-2001-nigeria.html>
- Nchu, R. M., Tengeh, R. K., Hassan, L., & Gervase, I. C. (2017). High school learner's interest and readiness to start a business: Evidence from South African schools. *WSEAS Transactions on Business and Economics*, 14(1), 144–152.
- Nowiński, W., Haddoud, M. Y., Lančarič, D., Egerová, D., & Czeplédi, C. (2019). The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Studies in Higher Education*, 44(2), 361–379.
- Nwosu, A. C., & Ukoha, P. (2013). *Funding youth entrepreneurship in SMEs: A Panacea for youth unemployment in Nigeria-Delta, in Nigeria*. https://media.africaportal.org/documents/tapolicybrief49_nwosu1.pdf
- Oduwale, T. A. (2015). Youth unemployment and poverty in Nigeria. *International Journal of Research in Sociology and Anthropology*, 1(2), 23–39.
- Olaniran, S. O., & Mncube, D. W. (2018). Barriers to effective youth entrepreneurship and vocational education. *Academy of Entrepreneurship Journal*, 24(4), 1–10.
- Olugbola, S. A. (2017). Exploring entrepreneurial readiness of youth and start-up success components: Entrepreneurship training as a moderator. *Journal of Innovation & Knowledge*, 2(3), 155–171.
- Ombati, M. (2013). Educational gender party: Challenges of the Kenyan girl. *JWEE*, 3–4, 109–125.
- Osotimehin, K. O., Jegede, C. A., Akinlabi, B. H., & Olajide, O. T. (2012). An evaluation of the challenges and prospects of micro and small-scale enterprises development in Nigeria. *American International Journal of Contemporary Research*, 2(4), 174–185.
- Oviawe, J. I. (2010). Repositioning Nigerian youths for economic empowerment through entrepreneurship education. *European Journal of Educational Studies*, 2(2), 113–118.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. Harper and Row Publishers.
- Pihie, Z. A. L., & Bagheri, A. (2010). Entrepreneurial attitude and entrepreneurial efficacy of technical secondary school students. *Journal of Vocational Education and Training*, 62(3), 351–366.
- Pihie, Z. A. L., & Bagheri, A. (2011). Malay secondary school students' entrepreneurial attitude orientation and entrepreneurial self-efficacy: A descriptive study. *Journal of Applied Science*, 11(2), 316–322.
- Quagrainie, F. A., & Ariwa, E. (2016). *Effective deployment of digital technologies for business enterprise in Sub-Sahara Africa: Implications for women entrepreneurs e-readiness for Internet usage in Ghana?* [Conference session]. 2016 Sixth International Conference on Innovative Computing Technology (INTECH), 2016, pp. 63–71. <https://doi.org/10.1109/INTECH.2016.7845131>
- Quinones, G., Nicholson, B., & Heeks, R. (2015). A literature review of E-entrepreneurship in 39 emerging economies: Positioning research on Latin American digital startups. In R. L. La Rovere, O. L. de Magalhães, & M. L. de Jesus (Eds.), *Entrepreneurship in BRICS* (pp. 179–208). Springer.

- Rauch, A., & Frese, M. (2007). Let's put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners' personality traits, business creation, and success. *European Journal of Work and Organizational Psychology, 16*(4), 353–385.
- Roundy, P. T., & Bayer, M. A. (2019). To bridge or buffer? A resource dependence theory of nascent entrepreneurial ecosystems. *Journal of Entrepreneurship in Emerging Economies, 11*, 550–575. <https://doi.org/10.1108/jee-06-2018-0064>
- Salami, S. S., Ademiluyi, L. F., Nwabufo, N. B., & Oladunjoye, G. T. (2019). Perceived relational support as determinant of entrepreneurial readiness of business education students in colleges of education South-West, Nigeria. *Al-Hikmah Journal of Education, 6*(1), 105–114.
- Sánchez, J. C. (2013). The impact of an entrepreneurship education program on entrepreneurial competencies and intention. *Journal of Small Business Management, 51*(3), 447–465.
- Santos, S. C., Costa, S. F., & Caetano, A. (2014). *Potencial empreendedor em indivíduos nas diferentes fases do processo empreendedor*. Conferência-Investigação e Intervenção em Recursos Humanos. <https://doi.org/10.26537/iirh.v0i5.2214>
- Schillo, R. S., Persaud, A., & Jin, M. (2016). Entrepreneurial readiness in the context of national systems of entrepreneurship. *Small Business Economics, 46*(4), 619–637.
- Setiawan, J. L. (2014). Examining entrepreneurial self-efficacy among students. *Procedia: Social and Behavioral Sciences, 115*, 235–242.
- Shamudeen, K., Ooi, Y. K., & Hassan, H. (2015). *Access to micro-finance as potential mediator on the relationship between microfinance awareness and entrepreneurial self-efficacy on SME performance in Nigeria: An empirical study*. School of Business Management, Universiti Utara Malaysia.
- Solfema, S., Wahid, S., & Harun Pamungkas, A. (2019). The contribution of self-efficacy, entrepreneurship attitude, and achievement motivation to work readiness of participants of life skill education. *Journal of Nonformal Education, 5*(2), 125–131.
- Startiene, G., & Remeikiene, R. (2009). The influence of demographic factors on the interaction between entrepreneurship and unemployment. *Engineering Economics, 4*(64), 60–70.
- Stevenson, H. H., Roberts, M. J., & Grousbeck, H. I. (1985). *New business ventures and the entrepreneur*. Richard D. Irwin.
- UNESCO. (2019). *TVET country profile Nigeria*. https://unevoc.unesco.org/wtdb/worldtvtdatabase_nga_en.pdf
- UNESCO-UNEVOC. (2012). *World TVET database*. Retrieved from: https://unevoc.unesco.org/wtdb/worldtvtdatabase_egy_en.pdf
- Villanueva, J., Van de Ven, A. H., & Sapienza, H. J. (2012). Resource mobilization in entrepreneurial firms. *Journal of Business Venturing, 27*(1), 19–30.
- Wilson, F., Kickul, J., & Marlino, D. (2007). Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: Implications for entrepreneurship education. *Entrepreneurship Theory and Practice, 31*(3), 387–406.
- Wilson, V. (2014). Research methods: Triangulation. *Evidence Based Library and Information Practice, 9*(1), 74–75.
- World Bank. (2019). *The World Bank in Nigeria*. <https://www.worldbank.org/en/country/nigeria/overview>
- Wube, M. C. (2017). *Factors affecting entrepreneurial intention of TVET trainees in WRO*. (Masters dissertation), Siheen Polytechnic College Education and training, Ethiopia. Academia.
- Yusuf, K., & Ibrahim, A. (2019). Influence of pedagogical approach on entrepreneurial competencies and entrepreneurship readiness of undergraduate students in North Western Nigeria. *Educational Research International, 8*(4), 24–31.