PSYCHOSOCIAL DETERMINANTS OF ENTREPRENEURIAL READINESS: THE ROLE OF TVET INSTITUTIONS IN NIGERIA

BY

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DECLARATION

I, Adeniyi, Adeshina Olushola declared that:

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DEDICATION

This thesis is dedicated to my Creator, Almighty God, the Author and the Finisher of my PhD programme in the University of KwaZulu-Natal, South Africa.

I also dedicate this thesis to my loving and supportive wife, Adeniyi Elizabeth Eyituoyo for standing by me emotionally and prayerfully, and to my gracious mother, Mrs. Funmilayo Okeyingbo for her moral and kind support throughout this academic journey.

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ABSTRACT

Scholarly works in recent times have made substantial efforts to identify that aspects of entrepreneurship that can stimulate entrepreneurial readiness for venture creation. Perhaps some of the most investigated subjects are personality traits, education, and social values. Previous studies on the need for entrepreneurial skills have established a disparity between the curriculum, pedagogical methods and the required skills for business creation. As a result, identifying the determinants of entrepreneurial readiness is of utmost necessity considering the increasing rate of youth unemployment in Nigeria. This current study aimed at determining psychosocial factors of entrepreneurial readiness by examining the influence of entrepreneurship education (EE), entrepreneurial self-efficacy (ESE) and individual entrepreneurial orientation (IEO) on entrepreneurial readiness.

This research study was sustained by the pragmatism philosophical paradigm. Case study research design was employed, and the mixed method approach was used in the collection of data for the purpose of triangulation of results. Through the use of triangulation technique, questionnaires were administered to a sample of 301 exit level students of three selected Technical Vocational Education and Training (TVET) institutions in South-West Nigeria, using convenience sampling strategy. A response rate of 96% from the students was achieved. With the adoption of purposive sampling technique, nine entrepreneurship teachers were selected for in-depth interviews from the three selected TVET institutions. Eight of the respondents granted the interviews, which was 88% response rate.

Thematic analysis of the qualitative data was achieved through the use of NVivo 12 software. SPSS version 25 was used in analysing the quantitative data. Descriptive and inferential statistics which include, Pearson's correlation and regression analyses of the quantitative data were conducted to achieved the research objectives. Three hypotheses were formulated to test the conceptual model through multiple regression analysis. A significant association was found between EE and entrepreneurial readiness. ESE searching, planning and implementing were found to be significantly associated with entrepreneurial readiness, but ESE marshalling has no significant association with entrepreneurial readiness. IEO as a whole showed significant association with entrepreneurial readiness, while risk-taking propensity was non-significant with entrepreneurial readiness. The study established that the exit level students lack the skills to gather economic or business resources towards starting a business. The study also revealed that entrepreneurship curriculum at the selected TVET institutions lacks practical approach.

There is no evidence in literature that attempts a mixed method approach to determine psychosocial factors of students' entrepreneurial readiness in the context of TVET institutions in Nigeria. The outcome of this study revealed that EE, ESE and IEO are psychosocial determinants of entrepreneurial readiness.

CHAPTER ONE

INTRODUCTION, BACKGROUND AND CONTEXT OF THE STUDY

1.1 INTRODUCTION

In many countries around the world, entrepreneurship has become the heart of economic advancement of the 21st century (Obschonka, Hakkarainen, Lonka, & Salmela-Aro, 2017). Entrepreneurship does play a pivotal role in the development of any nation's economy (Pugh, Lamine, Jack, & Hamilton, 2018). In a global report on entrepreneurship, as compiled by Valerio, Parton and Robb (2014), the authors noted that the United States government, through non-profit organisations supports small business owners in many communities to help grow their business through entrepreneurship programmes and loans scheme. Further, a public-private partnership programmes launched in 2013 by the Dutch government has been able to train more than 11,000 students from 450 schools on business development through entrepreneurship education (Valerio *et al.,* 2014). Previous studies have also revealed that entrepreneurial activities of universities in the United Kingdom have contributed strongly to economic development (European Commission, 2013; Guerrero, Cunningham & Urbano, 2015). Related evidence has been reported by Koen, Rahuman, and Bogiatzis (2018) that Singapore, Indonesia, Brunei, Malaysia and Thailand are currently in the advanced process of adopting concrete national policies and programmes to promote entrepreneurship (OECD, 2018).

In a recently compiled report by the Global Entrepreneurship Monitor (GEM) (2018), it is noted that the government, businesses, organisations and individuals now place more attention to encouraging more people to engage in startups around the world. The GEM (2017) report shows that 7.7 million people venture into new business yearly, but the readiness to establish entrepreneurial businesses is challenging and frustrating. Hence, there is a need to examine the determinants of entrepreneurial readiness and venture creation (Dawson & Henley, 2015). The development of entrepreneurial activities such as venture creation among individuals shows the significance of entrepreneurship education (Bakar, Islam and Lee, 2014; Looi & Maritz, 2021). Scholars have advanced that entrepreneurship education can help reduce poverty and educate individuals to become business owners (Sanchez, 2013; Abid, Hafizullah, Kaleem,

Khattak & Abbas, 2017). The importance of integrating entrepreneurship into the education system is reflected in the policies of many developed countries.

In a bid to inculcate entrepreneurial initiatives among individuals and achieve the Europe 2020 strategy, the European Commission has put in place a strategic plan to enforce the teaching of entrepreneurship education in every school in Europe (European Commission, 2013). The introduction of entrepreneurship into the education system in Europe has helped in developing young individuals by equipping them with required entrepreneurial skills to become entrepreneurs (Bakar *et al.*, 2014). This has led to the consistent growth of entrepreneurship education in Europe. However, the adopted entrepreneurship curriculum by the European countries still needs to be designed towards specific entrepreneurial skills and an extension from technical and science institutions (Wilson, 2008). An empirical finding from a sample of students in 17 European countries indicated that the curriculum content is not the most demanded in entrepreneurship education (Kuttim, Kallatse, Venesaar & Kiis, 2014). In the same vein, O'Connor (2013) stated that a major problem of entrepreneurship education in Australia is the inability of educators to identify a programme geared toward specific skills.

In the US, over 4,000 universities have designed entrepreneurship programmes in their academic calendar, and every state has a set of policies and programmes to support local entrepreneurs (U.S. Department, 2008). Similarly, career-focused entrepreneurship programmes in the United States are increasingly designed towards 21st century skills readiness (Rodriguez & Lieber, 2020). Students acquired entrepreneurial skills to create business plans and compete in a national school competition to actualise the business plans. Despite these laudable achievements, youth unemployment rate in the United States rose from 8.16% in 2018 to 8.37% in 2019 (World Bank, 2019).

The business-plan competition initiated by Tsinghua University in China was the offshoot of university entrepreneurship education (Tang, Chen, Li & Lu, 2014). In 1997, the Ministry of Education introduced university entrepreneurship education to provide venture creation activities among the students through the Education Revitilisation Action project (Tang *et al.*, 2014). Further, the central government also exempted new graduates with start-up from paying taxes and granted low interest loan to their businesses. Despite these remarkable entrepreneurship education reforms in China, scholars submit that entrepreneurship education does not fully satisfy students' entrepreneurial needs. For example, in a research study conducted among students from four major universities in China by Tang *et al.,* (2014), the

scholars found that there is insignificant difference in entrepreneurial desire between students who have received entrepreneurship education and those who have not. The significant benefits of entrepreneurship are yet to be realised.

The Malaysian Ministry of Higher Education has also taken the initiative by making entrepreneurship a compulsory subject in all the public universities with various entrepreneurship activities (Rahim, Kadir, Abidin, Junid, Kamaruddin, Lajin Buyong & Bakri, 2015). Although, issues and challenges still persist, the Malaysian entrepreneurship education is on the right course. This is evident in the research findings by Shamsudin, Mamun, Nawi, Nasir & Zakaria (2017) on factors affecting entrepreneurial intention among the Malaysian students, in which, the authors found that entrepreneurship programme has no significant moderation on the association between risk-taking, innovativeness, family background and entrepreneurship barrier with entrepreneurial intention.

In similar vein, some African countries have also considered entrepreneurship education as a driver of economic importance including Nigeria. In 2009, an innovative entrepreneurship policy was introduced into the university curriculum in Tunisia (Premand, Brodmann, Almeida, Grun & Barouni, 2016). The government developed a reform that introduced entrepreneurship education scheme to enable students acquire skills in developing business plan. In a similar development, the Ministry of Higher Education for Vocational Training and Labour required students to graduate by submitting business plans instead of the usual thesis (Premand *et al.*, 2016). These laudable policies were able to increase and promote self-employment among university graduates. Yet, the general unemployment rate in Tunisia remains unchanged despite the ability of the students to actualise business plans (Premand *et al.*, 2016).

Bomani, Fields and Derera'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. Malebana (2012) and Ndofirepi (2020) contended that about 23 South African public universities offer entrepreneurship training modules for both undergraduates and post-graduates' degree programmes. Currently, entrepreneurship education in South Africa is gaining more interests with the help of the government financial investment in entrepreneurship research and development (Ndedi, 2013). However, it is instructive to note that entrepreneurship education has been identified as one of the crucial factors restricting the growth and development of South Africa's economy (Fatoki

& Garwe, 2010). Additionally, South Africa is one of the countries with the highest unemployment rate in Africa, and this is because the youth do not have the confidence to start a business (Chimucheka, 2014).

The Tanzanian education system does not have a concrete entrepreneurship framework (Hunter, 2015). The education policy is focused on self-reliance through the amalgamation of the sciences, arts, technology and other related vocational courses (Efe, 2014). Few institutions in Dar es Salaam offered entrepreneurship education to encourage self-employment among the youth. According to UNESCO (2012), the Tanzanian Education Authority is still struggling to develop a well informed and learning populace to achieve the Millennium Development Goals and the Tanzanian vision 2025.

Sequel to the Federal Government directives to all tertiary education regulatory bodies on the incorporation of entrepreneurship education to the education system, an entrepreneurship curriculum was developed for all tertiary institutions at all levels in Nigeria. Entrepreneurship education is now a required course for every undergraduate student in the university. One of the skills-specific enterprise establishments is the Technical and Vocational Education and Training (TVET) institutions (Olorundare & Kayode, 2014). The focus of the TVET institutions is on acquiring practical skills, knowledge in various sectors of trades in relation to technologies and sciences, in order to become self-reliant (Olajide, 2015). The inability of many university graduates to secure a job has led to the continuous increase in the rate of enrollment in these institutions with the hope of acquiring entrepreneurship skills for self-employment.

Unfortunately, the implementation of the entrepreneurship education policy did not yield the expected outcome (Agbonlahor, 2016). Audu, Kamin and Balash (2013) argued that the Nigerian graduates still lack essential entrepreneurial skills to start a new business. Ayatse (2013) noted that there is no connection between entrepreneurship education and entrepreneurship practice. The entrepreneurship curriculum in the Nigerian TVET institutions is not preparing students to become business owners. This concern has been attributed to the absence of practical translation of specific entrepreneurial skills (Oviawe, 2010). From the foregoing, it can be inferred that an investigation to identify other aspects of entrepreneurship education that ensure entrepreneurial readiness and venture creation is imperative (OECD, 2014; Chatterjee & Das, 2015; Abid *et al.*, 2017).

Engaging in business start-up depends on an individual's personality traits or certain psychological characteristics that can predict entrepreneurial readiness or business success (Santos, Caetano & Curral, 2014). In accordance with the socio-psychological perspective, the theory of reasoned action and planned behaviour state that, behavioural actions (entrepreneurial readiness) are predicted by three psychosocial aspects. The three aspects include: attitude towards the behaviour, subjective norms and the level of perceived behavioural control (Ajzen, 2011). The assessment of the behaviour and its outcome suggest that the individual must possess some psychosocial elements to undertake the action. Thus, the role of psychosocial determinants of entrepreneurial readiness cannot be undermined in entrepreneurship domain.

Psychosocial determinants of entrepreneurial readiness could be described as psychological factors (such as attitudes, perception, motives, work experience etc.) and social factors (social norms, culture, education etc.) that can influence entrepreneurship activities (Rani, 2016). Scholars have advanced that three factors dominate entrepreneurial action or readiness to own a business. The first factor is the individual's demographic profile such as age, sex, previous experience, influence of role model. The second factor are the personality traits which include self-efficacy, autonomy, locus of control, risk taking propensity, professional attraction. The third factor is contextual which includes education and environment (Phuong & Hieu, 2015; Van Ness & Seifert, 2015; Osinem, n.d). Generally, previous research has focused on psychosocial elements that distinguish entrepreneurs from managers (Chen, Greene & Crick, 1998; Chatterjee & Das, 20015).

Phuong and Hieu (2015) demonstrated that risk-taking inclination and creativity, and locus of control and need for achievement had significant impact on entrepreneurial behaviour of starting a new enterprise. In their quest to determine psychosocial aspects that contribute to individuals' readiness to engage in entrepreneurial activities, Santos *et al.,* (2014) suggested that cognitive ability such as entrepreneurial self-efficacy and proactive personality should be included in determining individual's potential to become an entrepreneur. Similarly, Crant (1996) empirically found that proactive personality had incremental variance in predicting entrepreneurial behaviour. Jakopec, Krecar and Susaj, (2013) examined entrepreneurial self-efficacy and desirability of entrepreneurship as determinants of entrepreneurial prospect towards venture creation. Hassan and Wafa, (2012) argued that entrepreneurial prospect is planning to become self-employed in the future. Studies have shown that the ability to become self-employed relies on the psychological strength of an individual (Pihie & Bagheri, 2011;

Fayolle, 2013; Maritz & Brown, 2013). This is traced to the fact that personality traits or psychological attributes are peculiar to entrepreneurship (Chatterjee & Das, 2015).

Scholars have argued that an investigation into determinants of entrepreneurial readiness for new venture creation is required (Chatterjee & Das, 2015; Abid *et al.*, (2017). While some studies investigated psychological traits as determinants of entrepreneurial readiness (Jakopec et al., 2013; Chelariu, *et al.,* 2008; Koe *et al.,* 2014; Piperopoulos & Dimov, 2015; Maritz & Brown, 2013), others considered contextual factors. For instance, entrepreneurship education programme and competence (Sanchez, 2013), entrepreneurship education and entrepreneurial intention (Ibrahim, Bakar, Asimiran, Mohammed & Zakaria, 2015).

In developing personality traits or psychological characteristics that enhance entrepreneurial readiness and business start-ups in students, academic institutions incorporate various entrepreneurship pedagogical strategies. For example, entrepreneurial self-efficacy (ESE) which is regarded as an entrepreneurial trait (Maritz & Brown, 2013; Malebana & Swanepoel, 2014) has been inculcated in students through the accomplishment of entrepreneurial tasks. For instance: In a study conducted on university students from four Visegrad countries (Poland, Slovakia, Czech Republic and Hungary) by Nowiński, Haddoud, Lančarič, Egerová and Czeglédi (2019), the authors reported that ESE was introduced to the students in form of task-specific subject: ESE business searching, ESE business planning, ESE business marshalling, ESE implementing people, and ESE implementing finance. As a result, ESE was able to moderate between entrepreneurship education and students' entrepreneurship intention in all the four countries. However, entrepreneurship education only influenced entrepreneurship intention directly in Poland which is the only country that operates entrepreneurship education at higher institutions.

Turner and Gianiodis (2018) investigated universities in the U.S. on the adoption of entrepreneurship education through blended-entrepreneurship programmes. The study indicated that blended-entrepreneurship programmes are crucial to determine individual-level attributes towards entrepreneurship outcome. But blended-entrepreneurship programmes, which is the integration of entrepreneurship curriculum with technical degree is scarce in most U.S. universities.

Lackéus and Midletton (2015) identified venture creation programs in entrepreneurship education to successfully create new firms through exposure to business and innovative knowledge transfer among students from North America and Asia-Pacific region. Classroom

discussions, business case studies and inclusion of local business owners were found popular in integrating entrepreneurship education from basic to upper secondary schools in Finland (Ruskovaara & Pihkala, 2014). The findings of Fulgence (2015) on randomly selected education schools in Tanzania suggests that traditional teaching and assessment technique was used to deliver aspects of entrepreneurship skills. Experiential learning and innovative techniques of delivery was recommended to all schools with respect to entrepreneurship education (Fulgence, 2015). A sample of 552 students from selected universities in Uganda were found to have increased ESE through interacting with successful entrepreneurs, business experience of lecturers, class presentation and imaginary case study (Matlay, Abaho, Olomi & Urassa, 2015).

From the foregoing, it is evident that the study to comprehend what influences individual-level for business creation with respect to technical skills is still missing. Jiang, Xiong and Cao (2017) noted that previous studies are yet to provide that aspect of entrepreneurship education that can stimulate entrepreneurial readiness. It is in this sense that this study explores entrepreneurship readiness by three entrepreneurial characteristics: entrepreneurship education, entrepreneurial self-efficacy and individual entrepreneurial orientation. Besides, this study adopted a mixed method approach to measure the effectiveness of psychosocial determinants of entrepreneurial readiness at selected TVET institutions in Nigeria.

There is no evidence in literature on the study of psychosocial determinants of entrepreneurial readiness among students of TVET institutions in Nigeria. This investigation will aid in proposing a conceptual framework of entrepreneurship education for selected TVET institutions in Nigeria.

1.2 Background of the study

Entrepreneurship is increasingly gaining the interest of many economies due to its numerous opportunities (Obschonka, *et al.,* 2017). The European Commission (2013) identified entrepreneurship as one of the competent tools that must be considered as a life-long learning process. The adoption of entrepreneurship as a learning process requires a transformative entrepreneurship education system that can develop students that are entrepreneurially ready for venture creation (Kolb, 2014; Olugbola, 2017). Previous studies have noted that entrepreneurial readiness of youth can stimulate venture creation and reduce youth unemployment (Penaluna & Penaluna, 2015; Olugbola, 2017; Darmasetiawan, 2019). The International Labour Organisation (ILO) (2013) reported that the high and increasing youth

unemployment rate remains a critical challenge in developing countries, especially in Nigeria. National Bureau of Statistics, Nigeria (2014) revealed that youth unemployment rate in Nigeria averaged 23.63 in 2014 to a record of 38% in the third quarter of 2018.

The recent End SARS protest, which started on the 8th of October 2020, and later turned into riots in many parts of Nigeria is a true reflection of youth unemployment in the country. The End SARS protest started as a movement against police brutality and human rights violation. Due to government's unserious attitude towards ending the brutality of the police squad known as SARS, economic activities were brought to a halt in major cities in the country A massive turnout of youth across major cities in Nigeria expressed their grievances against the government due to unfulfilled employment promises and bad state of the economy (Owoaje & Sofola, 2021). While the End SARS protesters were peaceful, another fragment of the youth saw it as an opportunity. Shops and warehouses were looted, shopping malls were raided and many businesses were destroyed (Keshi, 2020). The situation has been attributed to government failure to tackle poverty, youth unemployment and corruption (Ochi & Mark, 2021).

Several interventions and programmes were initiated by successive governments to ameliorate the challenge of unemployment such as, the National Economic and Development Strategies (NEEDS), Subsidy Re-Investment and Empowerment Programme (SURE-P), National Directorate of Employment (NDE), and the Technical and Vocational Education and Training (TVET) (Oduwole, 2015) to mention a few. The latter was established as part of the education policies to acquire technical and vocational skills and foster entrepreneurial activities among the Nigerian youth. Further, in 2004, the Nigerian Government introduced entrepreneurship education into all higher institutions in the country including the TVET institutions (Olorundare & Kayode, 2014) with the aim to reinforce entrepreneurial skills towards business venture among graduates of TVET institutions. This laudable idea will equip graduates of higher institutions to create jobs rather than seek for jobs. Besides, TVET institutions are expected to be the epicentre of the nation's innovation and technological skills drive. Despite these robust initiatives, many graduates of TVET institutions are not creating jobs (Wube & Dessie, 2017). Literatures support the submission that students of TVET institutions lack entrepreneurial skills and are not ready for entrepreneurial activities (Akhuemonkhan, Raimi & Sofoluwe, 2013; Edmond, Oluniyi, Dem Isaiah & Barfa, 2014). The reason could be traced to the lack of practical translation in the curriculum content (Onweh, Akpan & Caleb, 2013;

Akhuemonkhan *et al.*, 2013), lack of entrepreneurship practice (Oviawe, 2010), and lack of entrepreneurial traits and confidence (Rasul, Ismail, Ismail, Rajuddin & Abdu Rauf, 2009).

Despite the aforementioned challenges, entrepreneurship education remains the key factor for essential entrepreneurial skills and business start-ups (Olanipekun, Brimah & Rabiu, 2016; Almarhea & Sarhea, 2018). Scholarly works suggest that other aspects of entrepreneurship education requires further investigations (Sanchez, 2013; Abid *et al.*, 2017; Jiang *et al.*, 2017). It is in this sense that the OECD (2014) recommended that business management skills, technical skills and personal entrepreneurial skills must be integrated into entrepreneurship education to enhance entrepreneurial success among young minds. The interaction of business management skills, technical skills and personal entrepreneurial skills with other aspects of entrepreneurship education among students of TVET institutions in Nigeria is yet to be comprehended. This study aims to fill this gap by examining psychosocial determinants of entrepreneurial readiness in selected TVET institutions in Nigeria. This investigation will aid in proposing a conceptual framework of entrepreneurship education for TVET institutions in Nigeria.

1.3 Problem statement

Entrepreneurial activities and business start-ups among the youths represent one of the pillars of job opportunities and economic growth. Marques, Ferriera and Zopounidis (2020) opined that the ability to create a business venture makes entrepreneurship a vital tool. In essence, entrepreneurship is basically for venture creation. Besides, small business owners and entrepreneurs have been identified as catalyst of economic advancement (Ribeiro-Soriano, 2017). Additionally, McKeever, Anderson and Jack (2014) argued that an enduring economic growth and wealth depend on entrepreneurs' activities. Due to increasing unemployment and poverty rate, governments of different countries, including Nigeria, encourage entrepreneurship and business start-ups among individual citizens (GEM, 2018). The Nigerian Government, in 2006 made entrepreneurship a compulsory course in all the universities in the country (Agbonlahor, 2016) in a bid to promote entrepreneurship education among the youth. Earlier in 2004, the Nigerian government mandated all tertiary education regulatory agencies to set up frameworks to develop and sustain entrepreneurial attitude for the students. This laudable initiative led to the introduction of entrepreneurship education in Technical and Vocational Education Training (TVET) institutions. This development is aimed at fostering

entrepreneurship skills among the youth, to create employment opportunities and reduce unemployment rate.

On the contrary, entrepreneurship activities in Nigeria have not yielded any positive economic effect. Despite being ranked among the top ten largest exporters of crude oil for many years, Nigeria has been an important case of youth unemployment for more than a decade (Maigida *et al.,* 2013). The National Population Commission in 2012 reported that 11 million youth were unemployed out of more than 33 million within 15 to 34 years age bracket (NPC, 2012). The unemployment rate rose from 14.2% in 2016 to 18.8% in the third quarter of 2017 (National Bureau of Statistics, 2018). This is of concern in a country that suffers high levels of illiteracy (UNESCO, 2017) and a rapidly expanding labour force. Extant literatures revealed that lack of entrepreneurial skills among the Nigerian youth contributes to the precarious rate of youth unemployment (Lame & Yusoff, 2013; Olorundare & Kayode, 2014).

The poor state of business start-up among graduates in Nigeria questions individuals' ability to own a business. The GEM report (2013), also noted that young entrepreneurs in Nigeria are dissuaded from sustaining a business when faced with the real challenges. Siyanbola, Afolabi Jesuleye, Egbetokun, Dada, Aderemi, Sanni and Razak, (2012) suggested that there is need to investigate factors that determine entrepreneurial attitude among Nigerian youth. Furthermore, Anwar ul Haq, Usman, Hussain and Anjum, (2014) argued that individuals' entrepreneurial readiness toward starting a new business must be critically examined. Furthermore, a high level of entrepreneurial readiness leads to increase entrepreneurial prospect to own a business (Pihie & Bagheri, 2012; Maritz & Brown, 2013; Piperopoulos & Dimov, 2015). Entrepreneurial readiness has been described as the ability of an individual to direct his active cognitive characteristics towards entrepreneurship behavior.

Many research studies have examined factors that determine entrepreneurial readiness for venture creation among the youths (Matlay, Othman, Hashim & Ab Wahid, 2012; Chartterjee & Das, 2015; Zakharova, Dulina & Talanova, 2018; Tariq, Malik, Wani, Shah, Bhat, Aishi & Rather, 2020). But few researchers have investigated determinants of students' entrepreneurial readiness in Nigeria (Siyanbola *et al.,* 2009; Kabir & Adamu, 2019). Despite all the investigated determinants of entrepreneurial readiness, there is no consensus on the factors that drive entrepreneurial readiness (Siyanbola *et al.,* 2009). Besides, the report of Ijdens (2015) implies that the dimensions of entrepreneurial psychological traits are complex, hence, future research is required to assess an individual's readiness for an entrepreneurial career. If this

study is not conducted, factors that stimulate entrepreneurial readiness for venture creation among the Nigerian youths may remain unknown. Based on these abovementioned gaps, this study aims to measure the influence of psychosocial determinants on entrepreneurial readiness. This investigation will aid in proposing a conceptual framework of entrepreneurship education for selected TVET institutions in Nigeria. It is worthy of note that there is currently no known study on psychosocial determinants of entrepreneurial readiness among students of TVET institutions in Lagos, Nigeria, and this study aims to fill this gap.

1.4 Research objectives

- To examine how entrepreneurship education influences students' entrepreneurial readiness at selected TVET institutions in Nigeria.
- To explore how entrepreneurial self-efficacy (ESE) influences students' entrepreneurial readiness at selected TVET institutions in Nigeria.
- To examine how individual entrepreneurial orientation (IEO) influences students' entrepreneurial readiness at selected TVET institutions in Nigeria.
- To propose a conceptual framework of entrepreneurship education towards entrepreneurial readiness at selected TVET institutions in Nigeria.

1.5 Research questions

- How does entrepreneurship education influences students' entrepreneurial readiness at selected TVET institutions in Nigeria?
- How does entrepreneurial self-efficacy (ESE) influences students' entrepreneurial readiness at selected TVET institutions in Nigeria?
- To what extent does individual entrepreneurial orientation (IEO) influences students' entrepreneurial readiness at selected TVET institutions in Nigeria?
- What type of framework can be proposed to determine predictors of entrepreneurial readiness at selected TVET institutions in Nigeria?

1.6 Rationale of the study

The continuous increase in the rate of unemployment in many parts of the world could be traced to the inability of the education system to produce graduates with the required entrepreneurial skills and attitude. Numerous research studies have shown that entrepreneurial traits could increase new venture creation and reduce unemployment among the youth particularly in developing countries (Mordi *et al.*, 2010; Tariqu *et al.*, 2020). However, most of the graduates

are not entrepreneurially ready for new business commitments (Mohammed & Ismail, 2014). Empirical findings revealed that the ability to control psychological characteristics towards entrepreneurial activities can influence entrepreneurial readiness among the youth in Nigeria (Siyanbola *et al.,* 2009; Ibrahim & Lucky, 2014). But the factors investigated so far do not sufficiently illustrate what constitutes the component of entrepreneurial readiness. Therefore, there are shortcomings in understanding how business opportunities are identified, planned and executed. This situation has created the need to explore both the psychological (entrepreneurial self-efficacy and individual entrepreneurial orientation) and social (entrepreneurship education) determinants of entrepreneurial readiness. Therefore, this study aims to examine psychosocial determinants of entrepreneurial readiness at selected TVET institutions in Nigeria. This is to determine which of these predictors stimulate entrepreneurial readiness. Additionally, this inquiry will assist in proposing a conceptual framework of entrepreneurship education for TVET institutions in Nigeria.

Scholars have suggested that a conceptual framework for entrepreneurial success by assessing psychosocial factors requires future investigations (Chatterjee & Das, 20015) particularly in Nigeria (Siyanbola *et al.,* 2009). The research on the examination of determinants of entrepreneurial readiness in Nigeria is still in its infant stage unlike in other developed countries. Most of the research studies on the development of a conceptual framework of entrepreneurship performance in Nigeria are focused on university students. A conceptual framework of entrepreneurship education for TVET institutions in Nigeria remains elusive. The proposed model could be adopted in other aspects of the education system.

1.7 Research methodology

This research study is underpinned by the pragmatism philosophical assumption. The pragmatism worldview is found appropriate for this study as it allows for the adoption of both inductive and deductive research approaches. A case study research design is found suitable to justify the selection of three TVET institutions in Lagos metropolis, Nigeria. The adoption of both quantitative and qualitative research approaches in the field of entrepreneurship is scanty. Most research studies on entrepreneurship education employed either a quantitative or a qualitative research approach. The application of either research approach is often associated with limitations or bias associated with them. The combination of both research approaches in terms of research findings and interpretation provides more reliable outcome of framework (Saunders *et al.,* 2016). This position is in concordance with the view of Fayolle and Linan

(2014) that the application of mixed method research techniques is relatively scanty in entrepreneurship research. This study adopted a mixed method research to measure the effectiveness of psychosocial determinants of entrepreneurial readiness at selected TVET institutions in Nigeria.

Convenient sampling technique, which is a non-probability sampling strategy was used in the selection of three TVET institutions in Lagos State, Nigeria. Being the hub of commerce and technology in Nigeria, Lagos State has the highest rate of nascent entrepreneurs, hence, the choice of location. The sample population was 1212, and Taro's equation model was adopted in the determination of 301 students as the sample size. Using purposive sampling technique, nine (9) entrepreneurship teachers were selected for in-depth interviews from the three selected TVET institutions. Quantitative data collection was done through a survey questionnaire, and in-depth interviews were conducted for qualitative data gathering. This was helpful to triangulate outcome from different sources (Sekaran and Bougie, 2016).

A total of two hundred and eighty-nine (289) questionnaires were duly filled and returned, while twelve (12) were poorly filled and discarded. Eight, out of the nine entrepreneurship teachers granted the interviews, but one declined and refused to divulge any information being a government official. Descriptive statistics using tables and graphs, and inferential statistics such as Pearson Product Moment Correlation, Regression model and Principal Component Analysis were utilised in the analysis of the quantitative data. NVivo 12 was helpful in the thematic analysis of the qualitative data.

1.8 Study limitations

One of the limitations in this study is the narrow focus on the exit level students from TVET institutions in Lagos Metropolis, Nigeria. Lagos State is one of the thirty-six states in Nigeria. The perceptions and contributions of exit level students from other states were excluded from this research study. This owes to the fact that business start-ups and demand for technical competence are higher in Lagos state than others. Hence, the findings from this study may not be generalised to the whole population of exit level students at TVET institutions in Nigeria. however, inferences can be made to other TVET institutions outside Lagos Metropolis since the education system is similar for all Nigerian TVET institutions. Secondly, some predictors of entrepreneurship readiness are traits-specific, thus, it may be difficult to determine what constitutes a conceptual framework for particular individuals.

1.9 The thesis organisation

This research work is organised into eight chapters in the following order:

1.9.1 Chapter One: Introduction, background and context of the study

This chapter starts with the introduction, which establishes the global importance and relevance of the phenomenon. The study background and the problem statement were illustrated in this chapter. The research objectives, research questions, justification of the study, study contribution, choice of methodology, and limitations of the study were also discussed.

1.9.2 Chapter Two: The Description of the study site

The Nigeria country profile was examined in this chapter, the historical development of entrepreneurship and entrepreneurship education in Nigeria were also discussed. The emergence and impact of the 4th Industrial Revolution on entrepreneurship education were also investigated.

1.9.3 Chapter Three: The Conceptual and Theoretical Frameworks of Entrepreneurship Education in Nigeria

This chapter presents entrepreneurship education from a global perspective, determinants of entrepreneurial readiness such as entrepreneurship education, entrepreneurial self-efficacy and individual entrepreneurial orientation were also discussed. The theoretical frameworks such as the human capital theory, Kolb's experiential theory and theory of planned behaviour were articulated with the research variables in order to formulate hypotheses and provide answers to the research questions.

1.9.4 Chapter Four: The integration of TVET and Entrepreneurship education in Nigeria

This chapter focuses on the nature of TVET institutions in Nigeria, global practice of pedagogical strategy, and need for TVET institutions were also discussed. An outlook of the digital revolution viz-a-viz skills demand for the future of work was also reviewed. The chapter explores the implication of the 4th Industrial Revolution on entrepreneurship education as regards teaching and learning, and theoretical frameworks of the study were presented.

1.9.5 Chapter Five: Research Methodology

This chapter explains some of the philosophical paradigms as it relates to research methods. The pragmatism philosophical assumptions were discussed considering its strengths in mixed method approach. This chapter also justified the selection of three TVET institutions in Lagos

metropolis through the adoption of case study research design. Inductive, deductive and abductive research approaches were presented and justification was given for the adoption of the abductive (integrative) approach. An explanatory mixed methods research was also illustrated in this chapter, in which more attention was given to the quantitative data. Explanations were given for the adoption of both simple random technique and purposive sampling technique.

This chapter also discusses the statistical tools used in the data analysis; such as the SPSS version 25 for quantitative analysis and the NVivo 12 for the qualitative analysis. The scale measurements, reliability and validity of the research instruments were explained as well as the ethical consideration and limitations of the study were also discussed in this chapter.

1.9.6 Chapter Six: Data Analysis and Presentation

The composition in this chapter includes analysis and presentation of the quantitative and qualitative data. The demographic information was illustrated, and the correlated relationship among the variables were also explained. Explanations were also presented on the test of hypotheses via regression analysis. The findings from the qualitative analysis using NVivo 12 were presented, and results from both quantitative and qualitative analysis were compared for triangulation purpose.

1.9.7 Chapter Seven: Discussion of Findings

The focus of this chapter is the discussion of the research outcome according to the research objectives, research questions and research hypotheses. The results from the quantitative and qualitative analysis were also discussed in relation to past empirical findings.

1.9.8 Chapter Eight: Summary of findings, Recommendations and Conclusion

This chapter discusses the summary of the research outcomes, recommendations and conclusion. The contribution to academic knowledge, limitations of the study and suggestions for future research were discussed in this chapter.

1.10 Conclusion

This chapter illustrated the introduction, background of the research study. A problem statement of the research was explained highlighting the research gap that exists, research objectives and research questions were discussed. This chapter presented the research justification, contribution, scope of the research methodology, limitation of the study and the thesis structure. The next chapter provides the literature review on the nature of

entrepreneurship education in general and in Nigeria in particular, and aspects of entrepreneurship education.

CHAPTER TWO

DESCRIPTION OF THE STUDY SITE

2.1 INTRODUCTION

This chapter focuses on the narratives in literatures relating to contextual information on the Nigeria economy with regards to socioeconomic issues including, population growth, youth unemployment and entrepreneurship development. This chapter also explores the development of the 4th Industrial Revolution vis-à-vis technological unemployment, and its implication for entrepreneurship education and TVET institutions in Nigeria.

2.2 Country profile of Nigeria

Nigeria's population is about half of west Africa with an estimate of 202 million people and one of the largest youth populations in the world (World Bank, 2020). The Nigerian society is culturally heterogenous and a multi-ethnic federation of 36 independent states and the Federal Capital Territory in Abuja. The country comprises of three major tribes namely Hausa-Fulani, Yoruba and the Igbos (Okoro, 2013, p.239). According to Okorie, Ademowo, Saka, Davies, Okoronkwo, Bockarie, Molyneux and Kelly-Hope (2013) report, Nigeria is divided into six geopolitical zones, namely North West, North East, North Central, South West, South East, and South-South. The country is bordered in the North by the Niger Republic, in the West by Benin Republic, in the East by Chad Republic and Cameroun and by the Atlantic Ocean in the South (Okorie *et al.*, 2013). Figure 2.1 below is the map of Nigeria showing the six geopolitical zones.

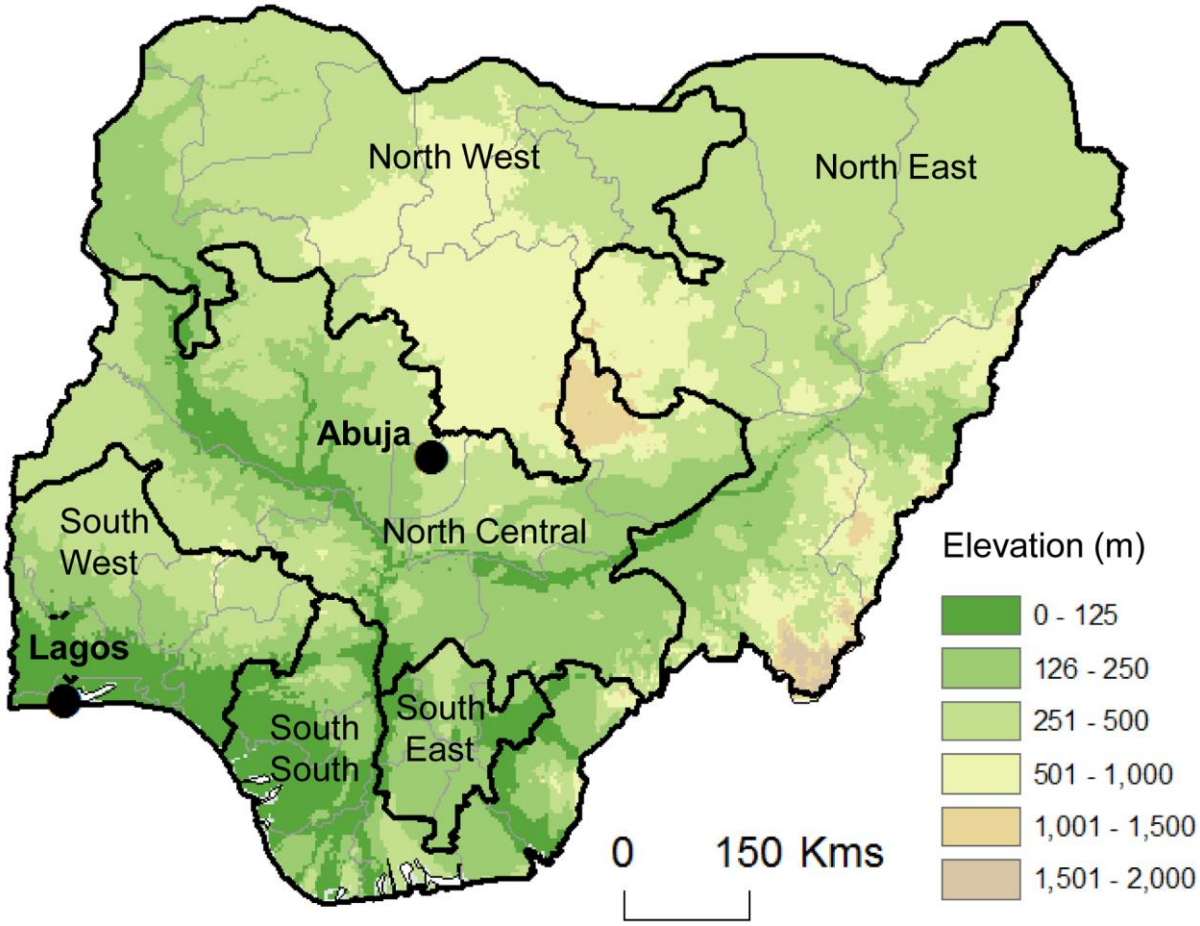

Figure 2. 1 The map of Nigeria

Source: Okorie *et al.* (2013, p. 6)

Nigeria is known for abundance natural resources, and the biggest oil exporter on the continent (World Bank, 2020). The Nigeria oil reserves makes her the tenth most petroleum-rich country in the world, and by extension the most affluent in Africa (Ogbuigwe, 2018). Being the third largest exporter of crude oil in the world, the Nigeria economy is mainly dependent on oil exportation. The over-reliance on oil led to the neglect of other productive sector of the economy which has greatly affected the country's GDP and the cause of unemployment. The World Bank (2020) reported an average GDP growth rate of 7% yearly. But a sharp decline to 2.7% in 2015, which later contracted by 1.6% in 2016. Despite the huge investment in some sectors of the economy, employment creation remains poor and lack the capacity to absorb the increasing youth population. The current unemployment rate stands at 27.1% while youth unemployment is estimated at 34.9% (National Bureau of Statistics, 2020). Job creation or entrepreneurship has been described as one of the critical factors to reducing unemployment in the country (Olorundare & Kayode, 2014).

2.3 Nature of unemployment and entrepreneurship education in Nigeria

The nature of unemployment in Nigeria is alarming without positive response to the rescue (Kayode, Arome & Silas, 2014, p. 68). The situation is so endemic such that different levels of unemployment exist. This section presents unemployment, and youth unemployment in Nigeria, historical development of entrepreneurship and entrepreneurship education in Nigeria, and overview of some entrepreneurship skills.

The International Labour Organisation (ILO) (2019) reported that unemployment covers persons between the ages of 15 to 64 who were available and actively ready to work and seeking for work but could not get work to do. Besides, the youth between the ages 15 to 24 are the most vulnerable in terms of unemployment (ILO, 2019, p. 35). The National Bureau of Statistics (2017) described unemployment as a case where people do nothing at all or work less than 20 hours within the reference week. Okoye, Okwelle and Okoye (2015) grouped unemployment into three categories;

i. Unemployed who have never been employed before
ii. Unemployed who lost their job due to lay-offs or retrenchment; and
iii. Unemployed who are retired from active service and may not be able to add value to the growth of the economy.

Akeju and Olanipekun (2015) affirmed that unemployment in Nigeria has different aspects. According to the authors, underemployment is a situation whereby people earn lower than the cost of their basic needs in terms of food, clothing and shelter. Another dimension is disguise unemployment where people are employed below their educational qualification and experience. The worst aspect of unemployment is a situation where people are seeking for employment opportunity but unable to get any (Akeju & Olanipekun, 2015).

According to the Trading Economics and the National Bureau of Statistics (2019), in Nigeria context, unemployment rate is measured as the number of people actively in search of a job as a percentage of the total workforce. Unemployment rate in Nigeria rose to 23.10% in the third quarter of 2018 from 22.70% in the second quarter of 2018. The number of unemployed persons rose from 17.6 million in third quarter of 2017 to 20.9 million in the third quarter of 2018 (Vanguard, December 20, 2018). The average range of unemployment in Nigeria since 2006 is 12.31% until 2018 hitting a record of 23.10% in the third quarter of 2018 and a record

low of 5.10% in the fourth quarter of 2010 (Trading Economics and NBS, 2018). The chart below shows the increasing rate of unemployment from 2016 to 2018 in Nigeria.

Figure 2. 2 Unemployment rate in Nigeria from 2016 to 2018

Source: Trading Economics/National Bureau of Statistics, Nigeria (2018)

There is an increasing number of empirical evidences on the effect of unemployment on economic growth. Through a panel root tests on 15 European countries, (Cetin, Gunaydin, Cavlak & Topcu, 2015) found that unemployment has negative but statistically significant impact on economic growth in a long-run effect. In Sri Lanka, Thirunavukkarasu, Achchuthan and Rajendran, (2014) found that there is over 40% significant impact of economic growth on unemployment in the short-run. But there is no long-term relationship between economic growth on unemployment. Unemployment was found to have positive but insignificant influence on economic growth in Tanzania over a long-term period (Suleiman, Kassim and Mo'd Hemed, 2017). In a contrast development, Jelilov, Obasa and Isik (2016) empirically demonstrated that unemployment has positive influence on economic growth in 10 West African countries (Nigeria, Cape Verde, Gambia, Guinea Bissau, Niger, Benin, Ghana, Cote d'ivoire, Mali, Senegal). The authors further stated that unemployment does not affect the economic growth of these countries.

Studies have also identified the contextual nature of the link between economic growth and unemployment. In a study carried out by Al-habees and Rumman (2012) over a period of 6 years found a significant correlation between economic growth and changes in the rate of unemployment. The authors argue that economic growth and rate of unemployment do not

have same impact in all countries. This assertion was confirmed in a study conducted in Jordan on unemployment rate and economic growth by Kreishan (2011) using Okun's approach within a span of 38 years. The author discovered that Okun's law did not work in Jordan as increase in economic growth also led to increase in unemployment rate. He maintained that economic policies geared towards structural change and labour market reform can help in reducing unemployment in Jordan. Kreishan concluded that the poor economic growth does not justify the problems of unemployment in Jordan. Kreishan's finding was supported in the report of Aganga (2010) who stated that the Nigeria's economy has been experiencing GDP growth rate measuring at 6% or 6.5% for more than a decade. Yet, unemployment rate is continuously high in the same period.

In comparison with other African counterparts, Nigeria's unemployment rate is more critical. For example, according to the ILO World Bank data for 2019 report, Rwanda's unemployment rate was at 1.0% in 2019, Burundi 1.4%, Kenya 2.6%, Liberia 2.8%, Madagascar 1.8%, Cote d'Ivoire 3.3%, Cameroun 3.4%, Burkina-Faso 6.3%, Ghana 4.3%, Benin, 2.2%, Chad 1.9%, and Nigeria 8.1% (ILO World Bank, 2019). Many reasons have been attributed to the continuous rise in unemployment rate in Nigeria. According to This Day Newspaper (October 19, 2019), the chairman of the Human Environmental Development Agenda, Mr. Suraju lamented that Nigeria lost 900 billion dollars to corrupt leaders in 59 years. Corruption among greedy leaders has been the most identified hinderance to economic development and the problem of unemployment in Nigeria (Kayode *et al.*, 2014). Poverty is another major challenge to Nigeria economic development. Over 70% of Nigerians are said to be living below one dollar per day (Odeh and Okoye, 2014).

There is no doubt that different measures and approaches may be adopted in different countries to reduce the rate of unemployment. Many scholars in Nigeria have advocated for entrepreneurship skills through entrepreneurship education (Agbonlahor, 2016; Ayatse, 2013) in order to be able to create jobs and become self-reliant thereby reducing the rate of unemployment and promote economic growth.

2.3.1 Youth unemployment in Nigeria

A person is said to be unemployed if he or she is potentially active and qualified, and willing to work but without job (Okoye *et al,* 2015). Youth unemployment in Nigeria has been attributed to many socio-economic factors such as, political instability (Oyebade, 2003), corrupt government (Onuoha, 2014; Onah & Okwuosa, 2016), increased number of graduates

without sufficient job opportunities (Akeju & Olanipekun, 2015), and most recently lack of entrepreneurship skills or industrial skills (Okorocha, 2014; Okoye & Okwelle, 2014; Edokpolor & Owenvbiugie, 2017).

The youth age in Nigeria according to Nigeria's National Youth Development Policy (2001), is between the ages 18 to 35 years (Okoye *et al*, 2015). According to the report of the National Population Census in 2006, youth population revealed 80 million out of 140 million Nigerians in 2006. This indicates that 60 percent of the total populations were youth, and 54 percent of the youth are unemployed (National Bureau of Statistics, 2012). Of this, female unemployment rate stood at 51.9 percent, while their male counterpart was 48.1 percent (Innocent, 2014). The consequential effect of this pathetic situation is increase in crime rate. 46, 836 youths were recorded to committing different types of crimes, 75.5 percent of them were males, and 24.5 percent were females (NBS, 2012). Notable crimes such as; smoking of marijuana (India hemp), murder, armed robbery, militancy, online scam, and kidnapping are rampant amongst Nigerian youths (Edokpolor and Owenvbiugie, 2017). The World Bank in 2012 reports that 80% (64 million) of youths in Nigeria were unemployed. In the third quarter of 2016, youth unemployment rose from 24 % to 29.5 % in the third quarter of 2017. Youth unemployment rate in Nigeria experienced a decrease from 38 % in the third quarter to 36.5 % in the fourth quarter (NBS, 2019). From 2014, it averaged 23.63 % until 2018, reaching a record of 38 % in the third quarter of 2018, and the lowest record of 11.70 % in the fourth quarter of 2014.

Figure 2. 3 Youth unemployment rate in Nigeria from 2016 to 2018.
Source: Trading Economics/National Bureau of Statistics, Nigeria (2018)

The Nigerian government has tried in so many ways to lessen the problem of poverty and unemployment particularly among the youth in the country. The Nigeria government has launched various programmes to cushion the effect of unemployment including, the National Accelerated Food Production Programme (NAFPP), by the Federal Department of Agriculture, the Directorate of Food, Road and Rural Infrastructure (DFRRI) by the World Bank, African Development Bank (ADB), and the United Nations Development Programme (UNDP), the Subsidy Reinvestment and Empowerment Programme (SURE-P), and the Youth Enterprise with Innovation (YOU-WIN) by the National Directorate of Employment (Kayode, *et al.,* 2014; Akande, 2014). However, these have had little effect (Okwelle & Deebom, 2017). In a recent report by the World Bank (2019), youth unemployment in the US stands at 8.5%, United Kingdom 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 14.0%. An assessment from the global and continent perspectives shows the reason why youth in Nigeria are unable to compete with their counterpart in terms of innovation and business start-ups. As a result, they are unable to add value to the economic development.

Okafor (2011) argued that increase in youth unemployment is traceable to lack of employability skills among most of the youth. Besides, numerous research studies have identified entrepreneurship skills as veritable tools for self-employment and economic development (Akhuemonkhan, Raimi & Dada, 2014; Okoye & Okwelle, 2014; Amadi & Johnwest, 2016). Onuma (2016) identified a positive correlation between entrepreneurship skills and employment creation and self-reliant amongst graduates in Nigeria. In the same vein, Awogbenle and Iwuamadi (2010) posited that entrepreneurship development has been recognised as the remedy to prevalent unemployment. Olorundare and Kayode (2014) also concluded that entrepreneurship skills are required to enhance job creation, and reduce unemployment, crime and government spending in Nigeria.

2.4 Historical development of entrepreneurship and entrepreneurship education in Nigeria

Discourse on entrepreneurship is traceable to the works of Richard Cantillon and Jean Baptiste Say. The scholars view entrepreneurship from the economic perspective as an unprepared combination of economic resources prompted by the uncertain intention of monopoly profit. The economic perspective of entrepreneurship best explains the development of

entrepreneurship in Nigeria. Entrepreneurship in Nigeria could be traced to the era of *trade by barter* before the advent of a legal tender (money) for buying and selling (Towobola & Raimi, 2011). The major situation during this period is when people produced more than they needed, and they had to exchange their surplus with those who need them for their immediate needs. This activity encouraged specialisation in the production of edible commodities particularly among farmers. Consequently, entrepreneurship started. It is in this sense that the history of entrepreneurship in Nigeria is associated with agriculture (Ebo, 2012). From subsistence farming to commercial production of commodities for buying and selling. This period also witnessed the emergence of entrepreneurs from other occupations such as textile weaving, tie and dye, arts and crafts, blacksmithing, wood carvings etc. These trades were predominant in the northern and western parts of the country, such that apprenticeship became prominent (Ebo, 2012). Apprentices later become business owners of the same trade after acquiring knowledge and skills of the trade. This process of apprenticeship could be described as informal entrepreneurship education.

In a formal setting, entrepreneurship education is acquired in schools and other academic institutions. Entrepreneurship education has been proven to be one of the mechanisms to create job opportunities, improve standard of living, sustainable economic growth and development, and increases student's entrepreneurial mindset (Ediagbonya, 2013; Agbonlahor, 2016). The acquisition of entrepreneurial skills towards identification of business opportunities and job creation depends on a functional entrepreneurship education.

The historical background of entrepreneurship education can be traced to the effort of Shigeru Fiji of the Kobe University, Japan, who developed education in entrepreneurship in 1938 (Abid *et al.,* 2017). However, the development of entrepreneurship education was advanced in the United States institutions and higher education (Abid *et al.,* 2017). International public policy makers such as the European Union (EU), United Nations (UN), and United Nations Education and Vocational Commission (UNEVOC) have continued to make strategic policies to incorporate entrepreneurship education into the education system. For instance, the EU report in 2013 recommended the adoption of entrepreneurship into the schools' curriculum of all levels for all the European countries. The UN report suggests exchange programs and technical transfer as essential practice in entrepreneurship for higher education institutions. The massive embarkment on entrepreneurship education by the US, Germany, Korea and China mirrors the continuous growth of business start-ups in technological domain (Ojeifo, 2013; Zhang, 2019).

Entrepreneurship education is still at a developmental stage in Nigeria. In 2006, the National Council on Education (NCE) during its 53rd annual meeting held in Calabar, Cross Rivers State of Nigeria directed the National Board for Technical Education (NBTE) and National University Commission (NUC) being the supervisory and regulatory bodies for technical institutions and university education respectively in Nigeria to present a blueprint plan for the implementation of entrepreneurship training across the nation. This is in a bid to equip tertiary students with entrepreneurial skills and knowledge to become job creators and not job seekers (Olorundare & Kayode, 2014), thereby reducing poverty, crime, and graduate unemployment (Aminu, 2016).

The NUC embarked on the campaign for the promotion of entrepreneurship education in Nigeria through the following objectives:

- Empowerment of the students
- Creation of employment
- Business diversification and
- Personal self-confidence (Onuma, 2016).

Sequel to this laudable initiative, entrepreneurship education is taught in all public universities and business schools in Nigeria, However, the implementation of the entrepreneurship policy did not yield the expected results (Agbonlahor, 2016). This is evident in the increasing rate of unemployment. Unemployment rate rose from 11.9% in 2005 to 19.7% in 2009 and above 37% in 2013 (Ogunmade, 2013), while youth unemployment was 38% in 2018. The country also witnessed a drop in the growth rate of the gross domestic product (GDP) from 6.5% in 2005 to 2.7% in 2015 due to the weak production industry (World Bank, 2020). The reason for poor production of goods is traceable to low creation of new businesses particularly among the youth. The inability of the youth to create new businesses have been attributed to the theoretical preference of the Nigerian system of education (Olorundare & Kayode, 2014), lack of collaboration between entrepreneurship education and entrepreneurship practices (Ayatse, 2013), and lack of the integration of entrepreneurial orientation postures such as risk taking, innovativeness, and proactiveness with the entrepreneurship curriculum (Aminu, 2016). Lame and Yusoff (2013) conducted an empirical study on the perception of polytechnic students in Nigeria towards entrepreneurship courses, and revealed that 33.3% respondents are not interested to become entrepreneurs but wish to work in the public sector as government employees. This suggests that the awareness of entrepreneurship education is still very low.

The authors further argued that majority of the students lack required skills to establish their own business.

Babalola (2011) also lamented that the integration of entrepreneurship into the curriculum of tertiary institutions in Nigeria is clumsy. Hence, many graduates in Nigeria are jobless and unable to create jobs of their own. This is in accord with Olanipekun *et al.,* (2016), that the Nigeria educational system cannot deliver the essential entrepreneurial skills due to the deficient university curriculum that is structured in a way that makes tertiary institutions' graduates unemployable. Onuma, (2016) suggested that curriculum planners NUC and NBTE should integrate entrepreneurship education into the curriculum of primary, secondary, and tertiary institutions in Nigeria for early acquisition of entrepreneurial skills to enhance job creation and self-reliant.

Entrepreneurship education according to Adeola and Bolarinwa (2010) is the aggregate of formalised training that imparts and educates interested individuals in venture creation or business development. For Adamu (2016) and Onuma (2016), entrepreneurship education is a process of imparting individuals with the ability to recognise business opportunities and the knowledge, skills and attitude to act on them. It is noteworthy that entrepreneurship education is adopted as skill acquisition intervention to develop in students' practical skills, traits of risk-taking, innovation, and ability to manage factors of production (Akhuemonkhan, Raimi & Sofoluwe, 2013). It is the process that enhances individual ability to identify business opportunities (Lame & Yusoff, 2013), and the management, diversification and growth that equips student with entrepreneurial knowledge and skills to take actions (Aderinwale & Bolarin, 2012; Olanipekun *et al.,* 2016).

2.4.1 Youth entrepreneurship in Nigeria

Youth entrepreneurship encourages innovation, and resilient spirit in youth to search for new ideas and solutions. It gives the youth a sense of responsibility, and belongings to shape the future by adding value to economic growth through creativity and innovations. Considering the expanding data of unemployed youth in Nigeria, promoting Small and Medium Enterprise becomes imperative for decision makers Fadeyi, Oke, Ajagbe, Isiavwe and Adegbuyi, (2015). Youth entrepreneurship in Nigeria is characterised by Small and Medium Enterprises (SMEs) mainly controlled by sole proprietors (Onuorah, 2009, p. 11).

A recent survey conducted by Fadeyi, *et al*. (2015) in the South-West region of Nigeria, Lagos State, which is the commercial hub center characterised by new and existing SMEs; shows that

there is a positive association amongst youth entrepreneurship, growth and national economy of the country. In another empirical study conducted in the Niger-Delta region of the country by Nwosu and Ukoha (2013), it was revealed that the indices for SMEs among the youth are profitable and productive which help to reduce unemployment in the region. The study highlighted some identified SMEs that also generate income and employment for the youth if properly funded e.g. metal fabrication, interlocking tiles, garments making, printing, bakeries, paint production, furniture works, leather bags, fish production, poultry rearing, aluminum fabrication etc. But the food and beverage enterprise have the highest annual capital growth of 164.55% by activity, while the electrical/electronic indicate the lowest capital growth in terms of activities.

Growth in capital base is a strong indicator for any potential investor (Nwosu & Ukoha, 2013). However, most SMEs collapsed in the quest for financial support, and the unwilling attitude of banks and financial institutions to lend to them. The Central Bank of Nigeria is yet to structure an effective financing programme for SMEs as some young entrepreneurs do not have the capital base and or collateral as demanded by the banks to access loans (Osotimehin, Jegede, Akinlabi & Olajide 2012, p. 176). Another factor is lack of entrepreneurial skills to manage business effectively (Agwu & Emeti, 2014). These entrepreneurial skills include innovation (Djankov, Miguel, Qian, Roland & Zhuravskaya, 2005), risk-bearing, (Bolton & Lane, 2012), sufficient entrepreneurial self-confidence, technical and managerial capacity skills (Fadeyi *et al.*, 2015; Nwosu, 2017), entrepreneurial spirit, and human and resources management skills also affect SMEs in Nigeria (Nwosu *et al.*, 2013). Besides, scholars have advanced that the solution to unemployment in Nigeria is through the acquisition of entrepreneurial skills (Odu, 2009; Fadeyi, *et al.*, 2015).

2.4.2 Need for entrepreneurial skills

Skills are described as the abilities and capacities of individuals who execute tasks demanded of them in a work environment (Saptono, 2018). Skills may be generic, but skills needed for business success are referred to as entrepreneurship skills. Ibrahim and Ma'sud, (2016) defined entrepreneurship skills as the ability to add value to the society, through the development or creation of an idea for monetary benefits. Further, Michael, Inyang and Ojeka (2016) opined that entrepreneurial skills refer to the aptitudes that enable the entrepreneur to create a new value through efforts and time with useful outcome. Chew, Hoe, Kim and Kiaw (2016) asserted that entrepreneurship skills are key components for an individual to have a sustainable and

independent livelihood. Ismail and Mohammed, (2015) submitted that entrepreneurial skills are prerequisite for sustainable self-employment. It includes risk-taking and innovation (Okurumeh, 2014).

According to Akinola (2013), entrepreneurship skills in Nigeria is becoming more imperative due to increasing unemployment, poverty and social vices amongst the populace. The current population of the Nigerian citizens is estimated at 202 million (World Bank, 2020). The Federal Bureau of Statistics in the year 2010, declared that the population of youths in Nigeria was 80 million, indicating 60% of the total population of the country (Awogbenle & Iwuamadi, 2010) out of which over 30 million were unemployed (Vanguard, January 14, 2017). One of the major causes of unemployment amongst youth in Nigeria is lack of entrepreneurial skills, which made many graduates from different disciplines to roam the streets of Nigeria in hopelessness (Umunadi, 2014). Similarly, Olajide, (2015) lamented that inability to take risk, and lack of confidence to own an enterprise is one of the challenges of graduates in Nigeria. Renko *et al;* (2015) affirmed that risk-taking ability propels an individual to launch uncertain business enterprise in order to develop the future. Creation of business enterprise requires critical entrepreneurial skills.

Entrepreneurial skills are essentials for entrepreneurs. Specifically, business management skills are required for any successful enterprise. Business management is associated with a variety of skills. The word "skill" depending on the context is synonymous with "competence", "ability", "talent", "aptitude", and "knack" (Ibrahim & Lucky, 2014). Therefore, entrepreneurs must be jacks-of-all-trades or multi-skilled to successfully manage any business (Lazear, 2004). Although, most of the entrepreneurial skills are personality traits (Chatterjee & Das, 2015), they can be acquired (Fayolle, 2018). A large and growing body of literatures has investigated different sets of entrepreneurial skills for entrepreneurial activities. For instance: Phuong and Hieu, (2015) identified most of the traits associated with successful entrepreneurs as locus of control, self-confidence, and risk-taking skills. Roodt (2005) highlighted some entrepreneurial skills considered necessary for self-employment and business sustainability such as proactivity skill, innovative skill, creative skill, communication skill, managerial skill, financial skill, perseverance skill, leadership skill, information-seeking skill, and technical skill. Chatterjee and Das (2015) conceptualised a framework for entrepreneurial performance which includes: locus of control, self-efficacy, tolerance of ambiguity, optimism, risk-taking propensity, independence and autonomy, innovativeness and need for achievement. It is worthy of note

that among all entrepreneurial skills sets, some have been identified for business start-ups and sustainability. These skills are presented below.

2.4.2.1 Risk-taking skill: In the analysis of Macko and Tyszka (2009), it was found that entrepreneurs have more positive attitude toward risk than non-entrepreneurs. It was also affirmed that individuals with higher self-efficacy tend to take more risk than those with less self-efficacy, and increase in individual confidence influences the propensity to take risk. Setiawan (2014) confirmed that calculated risk taking is a characteristic of an entrepreneur, and students require high risk- taking ability and self-efficacy to become a successful entrepreneur.

2.4.2.2 Innovative skill: Schumpeter in 1934 referred to innovation as "creative distruption" that brings about change. Innovative skill is arguably the most distinctive attribute of entrepreneurs, it distinguishes the entrepreneur from a less innovative business owner (Bolton & Lane, 2012). Carland and Carland (1997), and Mbanefo and Eboka (2017) asserted that innovativeness is the most significant propensity of entrepreneurial trait. Shane (2012) added that innovation is an essential attribute of entrepreneurship.

2.4.2.3 Proactive skill**:** in business context, it is the ability to be the first in the production of new goods or services to stay ahead of competitors (Sexton & Bowman, 1991). Mensmann and Frese (2018) equated proactive skills with personal initiative which is a crucial behaviour for successful entrepreneurship action. Martin and Iucu (2014) argued that proactive approach is required to change attitude and mindset towards entrepreneurial behaviour. Entrepreneurs have to be one step ahead of their customers' demands.

2.4.2.4 Personal entrepreneurial skill**:** this includes innovation, risk-taking inner control, and persistence (Elmuti *et al.,* 2012, p. 84). For Gonzaga (2019), it includes, risk-taking, persistence, goal setting, opportunity seeking, self-confidence, and persuasion and networking. These skills are essential for successful enterprise (Henry *et al.,* 2005). Hipolito (2021) further buttressed that personal entrepreneurial skills are entrepreneurial traits for business start-ups. Strategic entrepreneurship programmes can help in strengthening personal entrepreneurial competence for venture creation (Gonzaga, 2019).

2.4.2.5 Creativity skill**:** creativity has been considered an essential skill for entrepreneurs and entrepreneurship education (Schmidt, Soper & Facca, 2012). Yar, Hamidi, Wennberg and Berglund, (2008) identified a high significant on creativity and previous knowledge of

entrepreneurship to be positively associated with entrepreneurial intentions. Also, Golshek, Gholamreza, Mirsaladin, Askary, and Alireza (2010) found a positive relationship between creativity test score and entrepreneurship. Furthermore, Josoh, Ziyae, Asimiran, and Kadir (2011) affirmed that creativity and innovation have been listed by entrepreneurs in Malaysia as part of critical skills needed in entrepreneurship.

2.4.2.6 Financial skill**:** this skill can also be referred to as money management. It involves capital requirement of own-business, acquisition of capital and effective utilization of capital Entrepreneurs must know how to source for funds from the right channel, at the right cost of interest and at the time (Odia & Odia, 2013). The financial health of a firm is an indication of previous performance and a determinant of future performance. Therefore, financial management skill is an entrepreneurial skill for business decision making (Odia & Odia, 2013).

2.4.2.7 Self-efficacy skill**:** self-efficacy is an individual's belief that he/she has the ability to perform a specific task (Bandura, 2010). Furthermore, Drnovsek, Wincet, and Cardon (2010) affirm that self-efficacy is essential to entrepreneurship due to its task-specific nature, and possess the ability to assess individual confidence in relationship to his personality and the environment. Self-efficacy has been found to highly influence entrepreneurial behavior and increase entrepreneurial intention (Pihie & Bagheri, 2013; Piperopoulos & Dimov, 2015; Wang, Chang, Yao, & Liang, 2016).

2.4.2.8 Technical skill: Hisrich, Peters and Shepherd (2002) posited that technical skills includes written and oral communication, technical management and organising skills. According to the scholars, these skills differentiate an entrepreneur from a manager, and by extension, technical skills has significant influence on organisational performance (Narkhede, Nehete, Raut, & Mahajan, 2014). Further, technical entrepreneurial skills are essential for enhancing successful business enterprise (Elmuti et al., 2012; OECD, 2014).

2.4.2.9 Business management skill: the OECD (2014) identified these skills as essential for successful business. Almarhy and Sarea (2018) observed that business management skills include: decision-making, goal-setting, human resource management, finance, accounting, marketing, customer relation, negotiation, growth management and compliance with regulations (Elmuti, *et al.*, 2012). The following skills have been described as required business management skills.

2.5 The Fourth Industrial Revolution

The continuous change in technology has had huge impact on the global economies (Peters, 2017). This is as a result of the digital revolution, as most economies in the world are technologically driven. What the world is about to experience is an unprecedented phenomenon that will usher in complex challenges but abundant business opportunities, where only the skilled is relevant (Schwab, 2017). This chapter presents the future of work and relevant skills with respect to the 4th Industrial Revolution. It discusses the challenges and benefits of the phenomenon, and implications for entrepreneurship education.

The First Industrial Revolution witnessed the use of steam power and water for mechanical production. Mass production was introduced through the use of electrical energy in the second Industrial Revolution and the Third Industrial Revolution, witnessed automated production through information technology and electronics (Schwab, 2015). Also known as the Digital Revolution, the 4th Industrial Revolution will be characterised by higher levels of automation and systemic interconnectivity in manufacturing operations. Smart machines will coordinate production, smart robots will oversee assembly lines, and smart transport systems will deliver products from one end to another (BRICS, 2016). Moavenzadeh (2015) noted that the digitisation of industries will create mass business opportunities through big data, and cloud computing to satisfy individual customer needs perfectly, and increase global income rate and improve quality of life (Schwab, 2017).

Brynjolfsson and McAfee (2011) argued that it is an era of labour market disruption and reduction in labour cost, as skilled workers will gradually become obsolete leading to technological unemployment (MacCarthy, 2014). Earlier, Ford (2009) affirmed that increasing automation will create significant job loss of about 50% in a decade. The reason is not farfetched. Robotisation or autonomous intelligent systems have given rise to the emergence of self-driven cars, booking a flight, ATMs, pilotless drones, self-service check-outs etc. (Brain, 2003). And these are increasingly leading to job loss in clerical, and administrative functions, banks operations, restaurants, manufacturing activities (Frey and Osborne, 2015). Thus, technological unemployment is inevitable (Peters, 2017).

Frey and Osborne (2015) documented that there is an annual growth of 20% in household service robots, and an estimate of 47% of total occupation in the United States is at high risk of being computerised. The authors argued that labour substitution will increase in the service industry, and sales occupations will be computerised in the future. Bowles (2014), while using

ILO data for Germany also predicted that 51% of jobs are at risk of automation as a result of increasing algorithms, robotics and large data. Computerisation is set to take over the transport and logistics industry as autonomous driverless car is substituting manual tasks (Brynjolfsson & McAfee, 2011). This assertion is further supported by McCarthy (2014), that software development will offer 2.5 million jobs, and give support to other industries. Prisecaru (2016) added that 30% of the world's population use the social-media platforms for learning and exchange of information. These assertions justified the continuous relationship between technology and computerisation of jobs. Frey and Osborne (2015) posited that surviving ability of human labour to prevail over technological unemployment or the era of autonomous intelligence is acquisition of new skills, more especially cognitive skills.

The implication of acquiring new skills is getting higher education. Brandes and Wattenhofer (2016) conducted a study on various components of jobs susceptibility to computerisation. The scholars found a strong negative association between the level of education required for a job and its probability to be automated or computerised. The researchers further argued that jobs that require little education are at high risk of being automated, and jobs that require advanced level of education are at low risk of being automated. A major concern is how higher education can catch up with the speed of technological changes (Frey & Osborne, 2015). Pfeiffer (2015) observed that an advanced level of practical vocational training especially on ICT courses is required to tame the pace of digitalisation. Pfeiffer (2015) added that the continuous evolution of digitalisation of the industry and prevalence of vocational qualification suggests how ICT skills have been successfully managed. Technical Vocational Education and Training is that aspect of the educational sector with the potential of technological competence to match the pace of technological changes. There is therefore need to encourage open education that allows for opportunities, innovation, and access to new learning models and practices (Gordon, Peters & Besley, 2015), to avoid industrial skills mismatch.

2.5.1 Technological unemployment: Implication for TVET institutions in Nigeria

Frey and Osborne (2013) established that 47% of total jobs in the US is at high risk of being automated, and Bowles (2014) estimates it to be about 54% in Europe. In the same vein, Pajarinen, Rouvinen and Ekeland (2015) applied Frey-Osborne model, and found susceptibility of jobs to automation to be 35% and 33% in Finland and Norway respectively. In contrast, Lee (2016) conducted a study on susceptibility of jobs to automation in Singapore using Frey and Osborne's methodology. The author found that 25% of employment is at high risk of

computerisation. This makes Singapore one of the countries with lowest proportion of jobs at high risk. Furthermore, Lee empirically proved that majority of the workers who are vulnerable to automation are found in the service industry with educational qualification at secondary level and below. This finding supports the assertion of Brandes and Wattenhofer (2016), that jobs that require very little education, are at higher risk of automation.

From the abovementioned, it is evident that *"the robots are coming"* (Lanchester, 2015, p. 7), and labour market disruption is inevitable. The research investigation conducted by The World Economic Forum in 2016 on impact of disruptive change on employment during a 5-year panel between 2015 to 2020. Computer and Mathematical, and Architectural and Engineering showed the highest disruptive change in employment with 3.21% and 2.71% respectively. Manufacturing and Production, and Office and Administrative show the lowest with -1.63% and -4.91% respectively (World Economic Forum, 2016). This is an indication of the future of jobs and the required skills to respond to it. TVET institutions should concentrate more on developing computer related skills such as software development, Mathematical related skills such as analysis and management of large data, Architectural related skills such as graphic or 3D-printing designs, and Engineering related skills such as automation or robotic inventions (Eberhard, Podio, Alonso, Radovica, Avotina, Peiseniece, Caamano Sendon, Gonzales Lozano & Sole-Pla, 2017). Eberhard *et al.* (2017) opined that accessing the new major skillsets for the fourth industrial revolution requires changes in education methods which often take more than a decade.

Furthermore, by 2020, one-third of the current skills in most occupations that are yet to be considered as crucial to the present-day jobs will become the essential skillsets (World Economic Forum, 2016). Table 2.1 below shows jobs at risk and future jobs.

Table 2. 1 Jobs at risk and future jobs

Jobs at high risk	Future jobs
• Cargo and Freight Agents • Book keeping, Accounting, Auditing Clerks • Administrative occupations (e.g. order and procurement clerks) • Office clerks (e.g. Telephone Operators, Postal Service) • Paralegals and Legal assistants	• Human Resource Managers • Marketing and International Sales Managers • Database Administrators • Computer and Information System Manager/Administrators • International Consultants • Training and Development Managers • Computer Analysts • Industrial-Organisational Psychologists • Data Scientist Analysts • Social Media Managers • Network and Computer System Administrators

Source: Frey and Osborne (2013)

According to Schaper, Reis, Wildt, Horvath and Bender (2012) language skills, ICT literacy skills, risk management skills, entrepreneurial skills, analytical skills, emotional intelligence, and problem-solving skills are some of the required skills demanded by future manpower due to increasing digitalisation. Essel *et al.* (2014) observed that despite the increase in enrollment into TVET institutions to acquire technological skills, developing countries in Africa are still far behind the European countries in terms of technological advancement. Yet, advanced level of practical vocational skills is required for the future work readiness (Pfeiffer, 2015). Reeve (2016) reviewed that 21st Century Skills for TVET students include, Science, Technology, Engineering, Mathematics (STEM); Problem-Solving; and the Four 4Cs: Critical Thinking, Communication, Collaboration, & Creativity. Udoh and Akpan (2014) hinted that to address the issue of global competitiveness, two most remarkable advancements in the society – automation and globalisation must be taken seriously. But most African countries cannot compete with the developed world in terms of automation and globalization (African Centre for Economic transformation, 2014). Nigeria is not an exception, as the development of automotive skills for global competition remains a mirage. Besides, the TVET institutions that

are the primary source of automotive skills and other technological related services are faced with many challenges. Hence, the inability to compete at a global stage.

Numerous studies have revealed that TVET institutions in Nigeria are preparing students for jobs that may not be available by the time the students graduate (Udoh & Akpan, 2014). Most of the vocational learning tools are obsolete and could not match international standard (Okwelle & Deebom, 2017). Okurumeh (2013) added that massive investment on ICT infrastructural development, and establishment of vocational institutions to train students on ICT related skills must be embarked on for national development. Subrahmanyam (2016) suggested that educational reforms and changed social perceptions are required to unlock the potential of TVET. Scholars have suggested that educational institutions in Nigeria must make computer/ICT literacy a compulsory study at all levels of educational structure, and vocational/entrepreneurship education must be made compulsory to all categories of students (Ladipo *et al.,* 2013; Udoh and Akpan, 2014) because vocational and entrepreneurship education provide the essential skills to create jobs and eradicate poverty (Ladipo *et al.,* 2013).

2.5.2 Entrepreneurship education in the 4th industrial revolution

Entrepreneurship education provides training experience, and entrepreneurial skills that prepares an individual with competent ability to become self-reliant (Ismail & Mohammed, 2015). Trying to debate the future of Entrepreneurship Education is a difficult task (Fayolle, 2013) because the future in itself is complex. This could be attributed to the emergence of automation, robotics, 3D-printing, nanotechnology, and big data algorithm that will affect our educational system, business patterns, health system, and our lives (Schwab, 2017). In a research study carried out by Solomon, Duffy and Tarabishy (2002), the authors found a negative association between entrepreneurship education and technology. Only 21% of the respondents use virtual system technology in delivering entrepreneurship courses. This is one of the reasons business and entrepreneurship scholars fail by not embracing change (Kuratko, 2005). Rae (2006) advocated for entrepreneurial learning through technology-based enterprise. These composition supports the position of Idris and Rajuddin (2012), that entrepreneurship teachers in technical and vocational institutions could demonstrate a high level of business skills by engaging students in a computer-based method.

It should be noted that this study focuses on the "Next Generation" born after the year 1982. The Net Generation coincides with rapid development of technologies, specifically the internet. Unlike the "Baby Boomers" (1946-1964) or the "Generation X" (1965-1981), the Net

Generation are versatile with computers, and are more educated, faster, impatient, smarter than their parents, and interact often with the internet (Fredrick, 2007). This implies that entrepreneurship educators should combine entrepreneurship trainings with technology aided tools as pedagogical strategies in teaching and learning entrepreneurship. The adoption of ICT tools such as e-learning and computer-based simulation in conducting entrepreneurship training is a major innovative strategy (Maritz *et al*, 2010).

2.5.3 Implications for Teaching and Learning Entrepreneurship

In an attempt to discuss the teaching and learning of entrepreneurship, it is imperative to address the longstanding trajectory of either entrepreneurship can be learned or not (Maritz *et al.*, 2010). This assumption is an offshoot from the debate that entrepreneurs are born (Farell, 2016), or made (Olugbola, 2017). Plethora of studies have revealed that there is no unique evidence within researchers and business as to whether entrepreneurs are born or made (Flora, 2006; Mathew, Stowe & Jenkins, 2011). Mathew *et al.*, (2011) stated that entrepreneurship education should aim at developing self-discovery skills and align personal traits to market opportunity. Flora (2006, p.4) opined that "non- conformity to rules, high self-efficacy, achievement motivation, and preference for innovation are major contributors to the innovation and determination of entrepreneurs to succeed". In a research survey by Vesper (1990) in America, 93% of professors affirmed that it could be taught. Furthermore, Fleming (1992) suggested that education can help promote the advancement of entrepreneurial process. Therefore, it could be said that entrepreneurship can be taught (Fayolle, 2018), and entrepreneurs can be made (Kumari, 2018).

For entrepreneurship to address current societal challenges, it must apply technology in the educational setting (Kuratko, 2005). Okurumeh (2013) added that of all the technological changes that have disordered our social organisation, information technology is the most impactful on education. This makes methods of acquisition of skills or knowledge to become susceptible to continuous change since it involves exchange of information. This assumption concurs with Naudé (2017) that availability of entrepreneurial ecosystem is a function of the adoption of better digital/ICT systems. Entrepreneurship educators must adopt digital training methods especially for technology-savvy generation. Such method as blended learning approach aided by technology in delivering instructions (Frederick, 2007), to absorb digitally skilled workforce due to automation (Naudé, 2017). The concept of blended learning method supports the combination of various learning techniques propelled by technology. Hence the

growing interest of scholars in developing a digital learning operating framework for entrepreneurship education. In the same vein, Maritz, Brown and Jen (2010) proposed that blended learning approach is well suited to entrepreneurship education as it impacts required entrepreneurial skills and behavior in students.

2.5.4 Blended Training Approach

According to Frederick (2007, p. 12), "teaching is best done online and learning is best done in the classroom". The combination of face-to-face (FTF) learning and ICT for teaching led to the introduction of blended learning method. Extant studies abound on blended learning techniques (Maritz *et al.*, 2010), but there is limited research on its incorporation with entrepreneurship. Blended learning is a combination of delivery methods and interventions which include; a) live face-to-face (formal) e.g. instructor-led classroom; b) live face-to-face (informal) e.g. role playing; c) online synchronous e.g. live e-learning sections; and d) online asynchronous e.g. web learning courses, video and audio CDs/DVDs (Frederick, 2007). Traditional teaching strategies such as lectures, simulations, workshops etc. have been proven to be appropriate the dissemination of information to a large learner (Maritz *et al*, 2010). But the shortcomings as regards entrepreneurship education is well documented (Maritz *et al*, 2010).

In the empirical investigation of McCutcheon, Lohan Traynor, and Martin (2015), the authors found that virtual learning method is as effective as traditional method. Similarly, in the experimental study by Zhan and Mei (2013) revealed that students that are exposed to FTF learning method perceived significantly higher social presence, while social presence was more significant on students learning success and satisfaction in online environment. On the contrary, Smith (2013) observed that there is no difference in the examined performance of students in FTF setting compared to their online counterpart. Smith argued that the use of active online collaboration may improve student understanding of learning and social interaction. Other studies have also justified the importance of integrating blended learning method into entrepreneurship education as students learn in divers' modes (Kolb, 2014).

Carman (2005) suggested five key elements of a blended learning process:

- Life events: Synchronous, this is a form of virtual classroom system where learners participate in a life event simultaneously with the instructor.

- Self-paced learning: this involves learning experiences task that a learner completes individually at his own pace such as interactive, and internet-based.
- Collaboration: this is a situation where learners create a communication environment with one another for instance, online chat, e-mail and threaded discussions
- Assessment: this includes a measure of leaners' knowledge. Pre and post assessments can take place to determine mode of learning transfer.
- Performance Support Materials: a proper blended learning method should make use of on-the-job reference materials that can promote learning retention and transfer such as PDA downloads and PDFs.

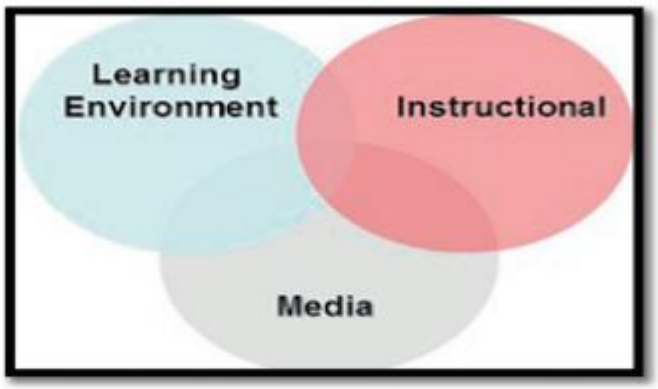

Figure 2. 4 The components of blended learning
Source: Holden and Westfall (2006)

The learning environment can take the form of synchronous or asynchronous. Blended learning takes advantage of the positive characteristics of both synchronous and asynchronous system to enhance learning (Holden & Westfall, 2006).

The instructional component is adopted to choose the most suitable instructional approaches that can aid the learning objectives (Holden & Westfall, 2006).

Media component refers to the medium used in delivering the content. The choice of media component is a function of the selected learning environment (synchronous or asynchronous). The most appropriate media component for any given content allows for a functional learning outcome (Holden & Westfall, 2006).

Similarly, the integration of FTF, experiential learning approach and computer-based method is depicted in Figure 2.5 below. These interactions suggest the future of teaching and learning in entrepreneurship education as proposed by Adeniyi and Ganiyu (2021).

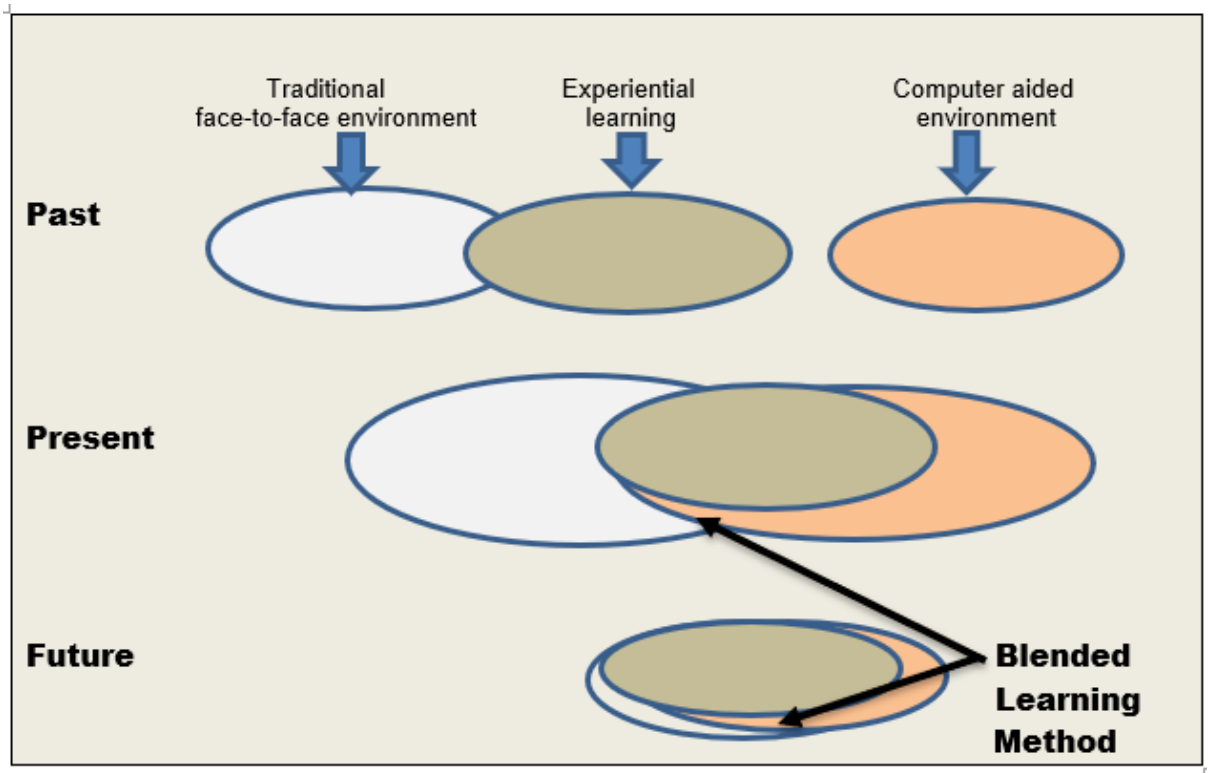

Figure 2. 5 Blended learning method
Source: Adeniyi and Ganiyu (2021)

Figure 2.5 above reveals the level of learning achievement through the combination of traditional face-to-face approach, and computer-based approach to activate blended learning method. The incorporation of experiential learning mode is to develop students' entrepreneurial skills through a combination of knowing and doing learning methods (Kolb, 2014; Bell, 2015). Figure 2.5 also shows how digital technology is isolated from teaching and learning of entrepreneurship in the past, and the present shows that experiential learning is more appropriate with computer-based method compared to traditional face-to-face approach (Adeniyi & Ganiyu, 2021). The future is believed to achieve a simultaneous increase in the use of blended learning method and experiential learning in entrepreneurship education. The combination of the three delivery approaches is expected to transform into a new teaching and learning paradigm in the future with the continuous advancement in digital technologies (Adeniyi & Ganiyu, 2021).

2.6 Chapter summary

This chapter described the country profile of Nigeria, the nature of unemployment and the historical background of entrepreneurship and entrepreneurship education in Nigeria were discussed. The need for entrepreneurship skills and an overview of various entrepreneurship skills were illustrated. The emergence of the 4th Industrial Revolution and its implication on entrepreneurship education in Nigeria were also examined. The next chapter presents the conceptual and theoretical frameworks for entrepreneurship education.

CHAPTER THREE
CONCEPTUAL AND THEORETICAL FRAMEWORKS ON ENTREPRENEURSHIP EDUCATION

3.1 INTRODUCTION

The development of entrepreneurship in the past three decades has led to the creation of various entrepreneurship modules and programmes in the academic discipline (Piperopoulos, 2012). This trend is based on the contributions of entrepreneurship education in the development of students' entrepreneurial activities, and skills to launch a business (Piperopoulos & Dimov, 2013). Entrepreneurship education aims at enhancing entrepreneurial mindset, entrepreneurial attitudes and skills as well as dimensions of idea generation, start-up, growth and innovation (European Commission, 2012; Alain, 2009). In many developed countries, there is continuous promotion of entrepreneurship education to increase its awareness and encourage business start-ups. This chapter examines entrepreneurship education from the global to local perspective.

3.2 Entrepreneurship education: A global perspective

Globally, entrepreneurship education is experiencing rapid development (Sanchez, 2013), as entrepreneurship actions are evident in countries like Japan, US, Germany, Korea and China that became part of the industrialised communities by strengthening their small-scale industries (Ojeifo, 2013). Chatterij, Glaeser and Kerr (2014) established that the creation of entrepreneurship clusters by the United States government through policies is evident in the local supply of entrepreneurs responding to creation of new start-ups at the Silicon Valley. Zhang (2019) affirmed that entrepreneurship is the remarkable factor that has made the economy of China to become the second largest economy in the world. The performance of SMEs in Germany shows the effectiveness and importance of entrepreneurship as various spin-offs emerge as a strategic process of tech-transfer (Fuerlinger, Fandi & Funke, 2015). Increased number of start-ups, self-employment and opportunity entrepreneurship are all evident in Netherlands and India (Naudé, 2010). More entrepreneurship supports have also been recorded in Sub-Saharan African countries. The United States and USAID's Global Entrepreneurship Program launched an entrepreneurship education programs for secondary school non-completers in Uganda and Tanzania as a measure to aid youth access employment or create their own microenterprise (DeJaeghere & Baxter, 2014). The European Commission advocated for the need for all young people to acquire at least one practical entrepreneurship program in

general education (European Commission, 2013). Through the K-rep Bank and Micro Finance institutions, the Kenyan government has set up youth development fund, women fund, establishment of incubation facilities and establishment of entrepreneurship education to early stages of the curriculum in Kenyan Education (Tubey, Nandwa, Omboto & Situma, 2015). The Integrated Strategy on the Promotion of Entrepreneurship and Small Enterprise was launched by the South African government to foster conducive environment for the development of entrepreneurship and Small Medium Enterprises (Cassim, Soni & Karodia, 2014), and these have been done through entrepreneurship education (Chimucheka, 2014).

Entrepreneurship education is slowly gaining the attention of academic institutions in some developing countries. Recently, Herrington and Coduras (2019) maintained that entrepreneurship education is still in a poor state in Sub-Saharan Africa. In the report of Kaijiage and Wheeler (2013), out of 52 higher education institutions in Kenya, entrepreneurship education programmes were offered in 22 institutions. In the case of Tanzania, only 2 out of 30 higher education institutions offer entrepreneurship programmes (Kaijige & Wheeler, 2013). Hampel-Milagrosa (2009) mentioned that entrepreneurship education is one of the strongest factors affecting profitable venture creation among Ghanaian women. Through entrepreneurship education, the Nigerian government promoted acquisition of entrepreneurship skills among the youth by establishing specific youth empowerment programmes. For example, the National Directorate of Employment (NDE), Student Industrial Working Experience Scheme (SIWES), Vocational and Technical Training, Agricultural Training, and Information and Communication Technology Training (ICT) (Olorundare & Kayode, 2014) to mention a few. Despite the introduction of these schemes, youth unemployment rate remains prevalent in Nigeria (Akande, 2014).

In the study conducted by Lame and Yusoff (2013) on polytechnic students in Nigeria, the scholars found that most of the students do not possess the necessary skills to launch a start-up. Recent studies have also identified lack of entrepreneurship skills among Nigerian students (e.g. Vincent, Nsini & Caleb 2013; Maigida *et al.,* 2013; Ahmad, Abdulkarim, Mallanti, Khata, Abubakar & Mohammed, 2014; Ismail & Mohammed, 2015; Amaechi, Orlu, Obed and Thomas, 2017; Okwelle & Deebom, 2017). Chatterjee and Das (2015) submitted that the motivation of an individual to become self-employed or perform entrepreneurship task is determined by some psychological traits. Koe, Omar and Majid (2013) stated that individuals would only perform entrepreneurial tasks if certain stimuli are triggered. These stimuli are what Phuong and Hieu (2015) referred to as personal traits of entrepreneurial activities.

Entrepreneurship education is a crucial predictor of personality traits for business creation (Hampel-Milagrosa, 2009). Abid, *et al.,* (2017) empirically found that entrepreneurship education has significant influence on entrepreneurial competence to create a new enterprise. Therefore, it becomes imperative to expose all students to entrepreneurship education since it aims at shaping behaviours and developing entrepreneurial skills (Akpomi, 2009).

Previous research noted that there is dearth of investigation in understanding the individual level of readiness towards starting a new business (Drucker, 2007; Anwar ul Haq, Usman, Hussain & Anjum, 2014). This has been traced to individuals varying prospect or degree of entrepreneurship readiness (Justo, De Castro & Maydeu-Olivares, 2008). Justo *et al.,* (2008) argued that individuals differ in their likelihood to engage in entrepreneurial behaviours. This individuals' variation is determined by different psychological factors or predictors of entrepreneurial readiness. Some research studies have examined various determinants of entrepreneurial readiness towards entrepreneurship behaviour in both advanced and developing economies. For example, Raza, Muffatto and Saheed (2019) empirically investigated the relationship between entrepreneurial readiness and entrepreneurial behaviour using data collected by GEM from 51 countries which includes Argentina, Australia, Austria, Canada, China, United States, United Kingdom, Germany, France, Hungry, India, Italy, Japan, Hong Kong, Ireland Russia, South Africa, Nigeria to mention a few. The scholars found a significant association between entrepreneurial readiness and entrepreneurial behaviour.

Perception of good opportunities, and social entrepreneurial environment were used by Justo *et al.,* (2008) to determine entrepreneurial readiness. Braum and Nassif (2019) adopted inclination to entrepreneurship, individual entrepreneurial orientation and tendency to entrepreneurship in determining entrepreneurial readiness. Olugbola (2017) empirically found opportunity identification, motivational factors, resources, and entrepreneurial abilities as determinants of entrepreneurial readiness. Regulative, normative, cognitive and conducive were found to determine entrepreneurial readiness by Schillo, Persud and Jin (2016). Other determinants found to influence entrepreneurial readiness were; perception of the environment, motivation, attitudes and competencies (Kallas, 2019), and entrepreneurship education (Abid *et al.,* 2017). However, the research on entrepreneurship education as determinants of entrepreneurial readiness at selected TVET institutions in Nigeria is yet to be explored. Sanchez (2013) had previously maintained that other aspects of entrepreneurship education require further investigations. Furthermore, the contribution of entrepreneurship education to entrepreneurial readiness has not been comprehensively investigated. From the foregoing, this

study aims to examine psychosocial determinants of entrepreneurial readiness at selected TVET institutions in Nigeria. This research investigation will assist in proposing a conceptual framework of entrepreneurship education for TVET institutions in Nigeria.

3.2.1 Need for entrepreneurship education

Entrepreneurship education is essential for the provision of skills, knowledge and competence for economic development (Sanchez, 2013). Entrepreneurship education is increasingly booming worldwide. Although, the main focus of entrepreneurship programmes is in the universities, interventions are developing in primary and secondary schools (Fayolle, 2018). Additionally, the growth of entrepreneurship education is evident in business schools, conference proceedings, and numerous literatures. In many developed countries, there is continuous promotion of entrepreneurship education to increase its awareness and encourage business start-ups.

Business start-up is a catalyst for economic development as it helps to reduce unemployment. However, the incorporation of entrepreneurship education by many countries is not yielding results in terms of employment creation, particularly among the youth. According to the ILO data as compiled by Plecher in 2020, there has been a marginal increase in the rate of unemployment between 2018 and 2019 in the countries surveyed. The report revealed that youth (15-34) unemployment rate in the United States rose from 8.16% in 2018 to 8.37% in 2019, while that of China stood at 10.65% in 2019 from the previous 10.59% in 2018. For Canada, it rose from 11.57% in 2018 to 11.81% in 2019. Japan recorded 3.7% in 2018 to 4.07% in 2019. An increase from 10.42% in 2018 to 10.51% in 2019 was recorded in India. South Africa had a rise from 52.85% in 2018, to 53.18% in 2019. Senegal stands at 8.4% in 2019 from 7.99% in 2018. In the case of Nigeria, youth unemployment rate witnessed a marginal decline from 19.68% in 2018 to 19.58% in 2019. However, poverty and unemployment, particularly among the Nigerian youth, remain a global epidemic (Maigida Saba & Namkere, 2013).

Researchers have noted that entrepreneurship education is still at infant stage (Kuratko 2005) or adolescent stage (Low, 2001) especially in Sub-Saharan Africa (Herrington & Coduras, 2019) including Nigeria. Manson (2011) lamented that the adoption of entrepreneurship education still probes the questions of what to teach (curriculum content) and how to teach (pedagogical strategies). Fayolle (2018) noted that variations in pedagogical methods still hinders entrepreneurship education approach, and the entrepreneurship programmes do not

address the requirements and needs of the students (Hynes, 1996). In a recent study conducted by Herrington and Coduras, (2019) on four Sub-Saharan African countries: Angola, Madagascar, Mozambique and South Africa, using GEM data, the scholars found that poor level of entrepreneurship education is one of the factors inhibiting entrepreneurial development. Entrepreneurship education is the most relevant factor in the propensity for business start-ups (Rodrigues, Raposo & Fererira, 2010). Olanipekun *et al.,* (2016) argued that the education system in Nigeria cannot provide the essential entrepreneurial skills due to the faulty curriculum. The findings of Lame and Yousef (2013) on polytechnic students in Nigeria, revealed that 33.3% of the respondents prefer to work as public servants rather than owing a business. This indicates that the awareness of entrepreneurship education is still very low in Nigeria.

It is against this background that different studies suggest that future research should focus on the framework for entrepreneurship education across different entrepreneurship aspects towards starting a business (Sanchez, 2013; Maritz & Brown, 2013; Piperopoulos & Dimov, 2015). In the light of this, Hisrich and Peter (1998) as cited by Henry, Hill and Leitch (2005) categorised three specific skills as determinants of business success required by entrepreneurs; this include technical skills, business management skills and personal entrepreneurial skills. Recently, the Organisation for Economic Co-operation and Development (OECD) annual report in 2014 identified technical skills, business management skills and personal entrepreneurial skills as the required skills for young entrepreneurs (OECD, 2014). Various studies have empirically lent their support in the adoption of these specific entrepreneurial skills as content of entrepreneurship education (Elmuti, Khoury & Omran, 2012; Martins & Pear, 2015; Almarhy and Sarea, 2018). This study aims to explore these skills as psychosocial determinants of entrepreneurial readiness at selected TVET institutions. Besides, this investigation will aid this study to propose a conceptual framework of entrepreneurship education at selected three TVET institutions in Lagos Metropolis, Nigeria.

3.2.2 Frameworks of entrepreneurship education in Nigeria

Previous studies on developing a conceptual framework of entrepreneurship education in Nigeria is well documented. Moses and Akinbode (2014) proposed a holistic organisation of entrepreneurship knowledge for university students by adapting a conceptual framework of entrepreneurship education originally developed by Gibbs (2006). The authors called for a paradigm shift from the traditional top-down approach to a bottom-up approach. Further,

Moses and Akingbola (2014) suggested the incorporation of students' feelings, interests and attitude into entrepreneurship curriculum. Figure 3.1 below depicts a conceptual framework for entrepreneurship knowledge.

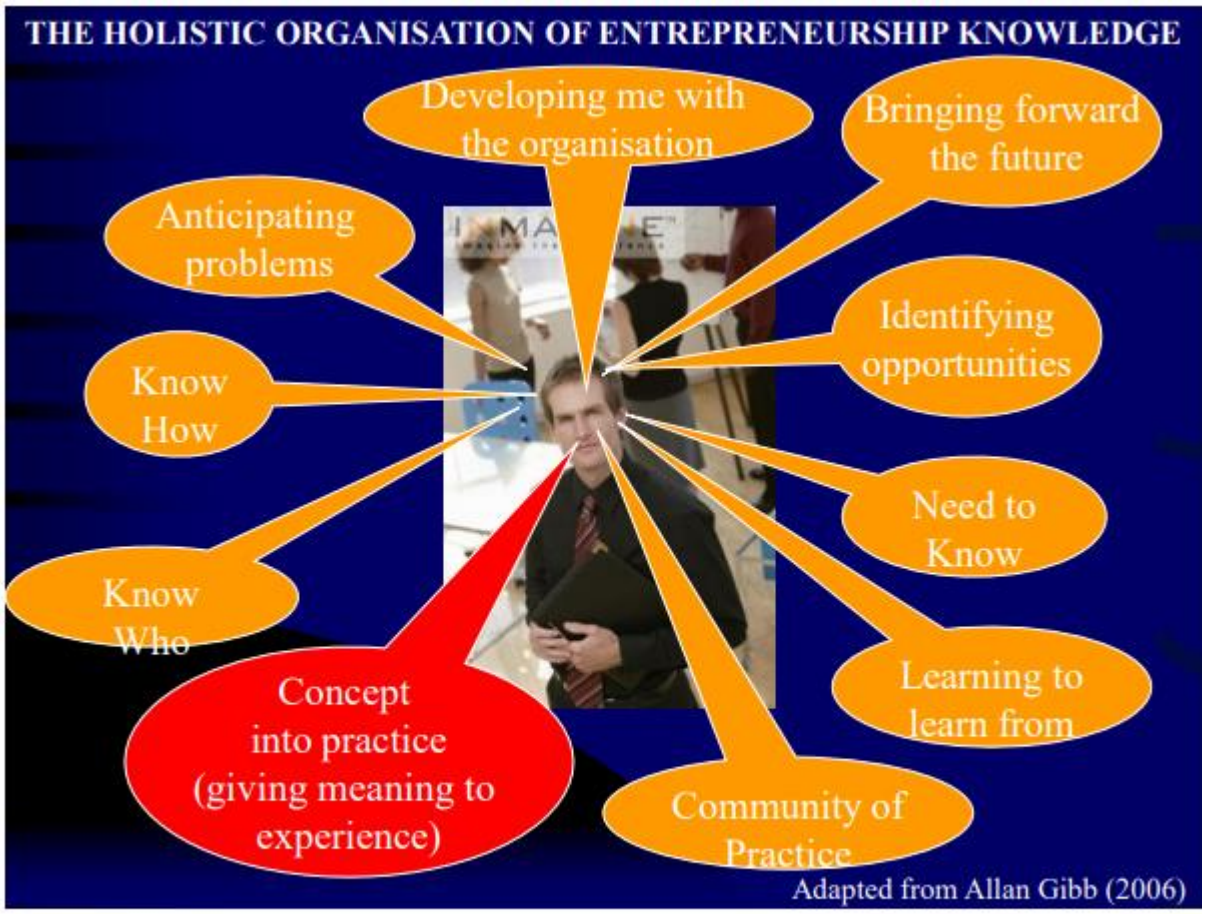

Figure 3. 1 The holistic organisation of entrepreneurship knowledge

Source: Moses and Akinbode (2014, p. 7)

Furthermore, in figure 3.2 below, Offusio, Nwodolo and Dede (2010) emphasised for job creation via skills development, orientation, career development and opportunities as shown in Figure 3.2 below.

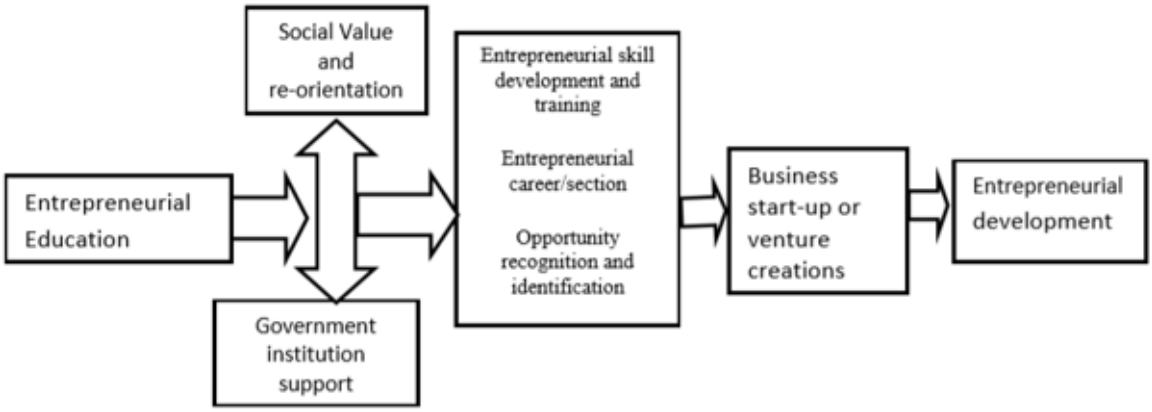

Figure 3. 2 Entrepreneurship education framework for entrepreneurial development

Source: Offusio, Nwodolo and Dele (2010, p. 20)

As shown in Figure 3.2 above, Offusio *et al.,* (2010) as cited in Onuma (2016) proposed the model to suggest that students will acquire training and skills through entrepreneurship education to identify business opportunities, and create a venture while in school. The identification of business opportunities will enhance business start-ups towards entrepreneurial development. Hence, there is need to integrate entrepreneurial education in the curriculum of schools. Furthermore, Olorundare and Kayode (2014) provided an entrepreneurship education framework for national transformation. The authors argued that entrepreneurship education must be geared toward national transformation, and public-private partnership must be incorporated to fund academic institutions in order to produce graduate entrepreneurs that can transform the economy. Figure 3.3 below depicts a conceptual framework of entrepreneurship education.

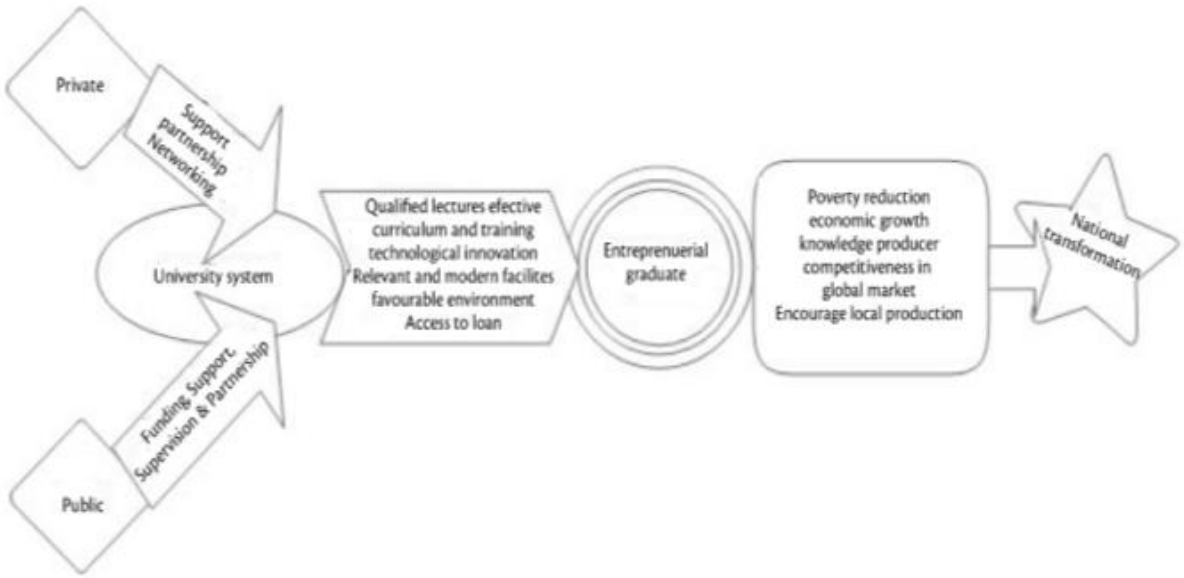

Figure 3. 3 Entrepreneurship education framework for national development
Source: Olorundare and Kayode (2014, p. 170)

From figure 3.3 above, Olorundare and Kayode (2014, p.170) posited that public and private support for the university system is crucial for the development of lecturers, curriculum and entrepreneurial graduates. This development will help to reduce poverty and lead to economic growth for national development. This framework suggests the process of entrepreneurship education for the university system. Besides, most of the conceptual frameworks of entrepreneurship education in Nigeria are developed for university institutions. A conceptual framework of entrepreneurship education that integrates technical skills, business management skills and personal entrepreneurial skills at public TVET institutions in Nigeria is yet to be developed.

Elmuti *et al.,* (2012) investigated the impact of entrepreneurship education and training on entrepreneurial skills and found causal linkages between managerial skills and interpersonal skills, and a high score of positive relationship between entrepreneurial training skills and ventures' effectiveness. This implies that entrepreneurial training through entrepreneurship education can greatly influence venture creation positively. Students of technical and vocational institutions can acquire these skills through effective entrepreneurship education to become business creators (Elmuti *et al.*, 2012). Almarhy and Sarea (2018) also reviewed how entrepreneurship education impacts and affect technical skills, business management skills, and personal entrepreneurial skills for future competitive readiness. The study places strong emphasis on entrepreneurial skills and critically shows the importance of entrepreneurship

education to develop technical skills, business management skills and personal entrepreneurship skills as shown in Figure 3.4 below. Most often lack of these skills results in business failure or an entrepreneurial venture not sustained.

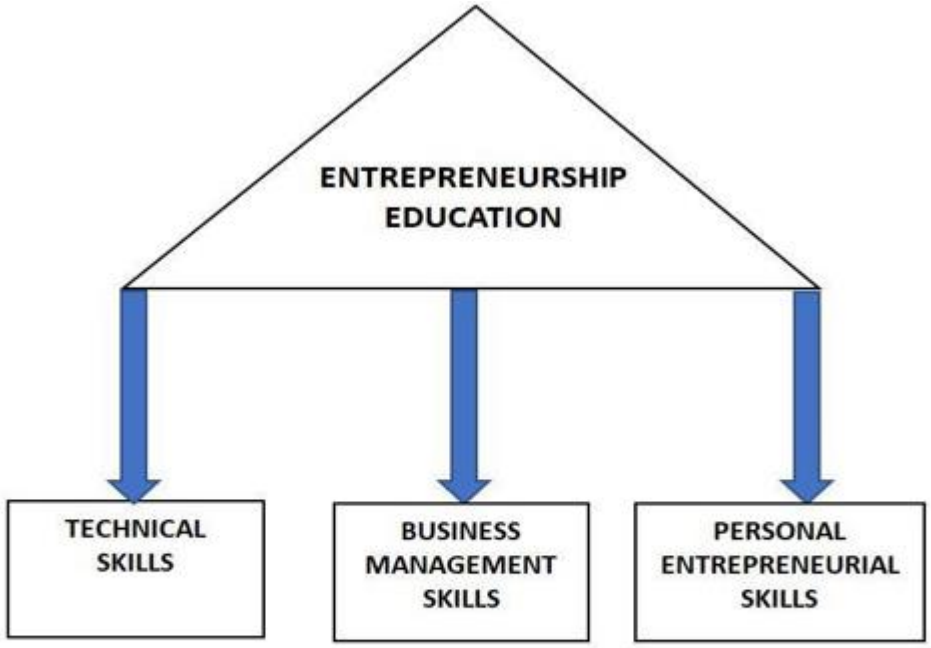

Figure 3. 4 Entrepreneurship education framework

Source: Almahry and Sarea (2018, p. 4)

Almarhy and Sarea (2018) opined that technical management skills referred to written and oral communication, technical implementation skills, organising skills, problem solving and interpersonal skills (Martins & Pear, 2015). Business management skills include decision-making, goal setting, human resource management, finance, accounting, marketing, customer relation, negotiation, growth management and compliance with regulations (Elmuti *et al.*, 2012; Martins & Pear, 2015). Personal entrepreneurial skills such as innovation, risk-taking and persistence are required for successful enterprise (Henry *et al.*, 2005). Bolton and Lane (2012) also argued that innovation and risk-taking have positive relationship and a great influence on any intending entrepreneur. Thornhill and Amit (2003) opined that failure of young entrepreneurs in business is traced to deficiencies in business management skills, and as observed by Jackson and Chapman (2012), business graduates are deficient in vital element of managerial skill set. Skills acquisition is one of the aims of entrepreneurship education, and this can be achieved through a well reformed educational curriculum (Elmuti *et al.*, 2012). One of the objectives of this study is to examine technical skills, business management skills and personal entrepreneurial skills as determinants of entrepreneurial readiness at selected TVET

institutions in Nigeria. Research on these specific entrepreneurship skills is limited among students of TVET institutions in Nigeria.

Additionally, entrepreneurship education has been proven to stimulate entrepreneurial readiness. Olugbola (2017) revealed that entrepreneurship training mediates between opportunity identification, resources, motivation and ability, and entrepreneurial readiness of youth start-ups. Samsudin, Ab Jalil, Ab Wahid, Yahaya and Jizat, (2016) revealed that university students' entrepreneurial readiness was influenced toward entrepreneurship activities after entrepreneurship education exposure. Nchu, Tengeh, Hassan and Iwu (2017) noted that 73% of South African high school learners showed entrepreneurial readiness with the view of starting a business through knowledge and skills gained in entrepreneurship education. Hariyanto, Usman and Pardjono (2017) demonstrated that students' entrepreneurial readiness was increased (79.12%) after attending the integrated learning process in Vocational High School. However, the influence of entrepreneurship education on students' entrepreneurial readiness at selected TVET institutions in Nigeria is yet to be investigated. This study aims to fill this gap by examining psychosocial determinants of entrepreneurial readiness at three selected TVET institutions in Nigeria. This research investigation will help in proposing a conceptual framework of entrepreneurship for TVET institutions in Nigeria.

3.3 Entrepreneurial self-efficacy (ESE)

The concept of self-efficacy could be traced to the work of Bandura who defined it as an individual's confidence towards the ability to successfully accomplish a specific task (Bandura, 1997). Boyd and Vozikis (1994) opined that self-efficacy is a strong antecedent to entrepreneurial intention. Self-efficacy plays a significant role in how individuals think and behave. If their training enhances their self-efficacy, this will increase their chances of owning a successful business. Many scholars of entrepreneurship have conceptualised entrepreneurial self-efficacy, as the belief of an individual's perceived abilities to successfully assume the roles and responsibilities of an entrepreneur (Barbosa, Boyd & Vozikis, 2007; Chen, Green & Crick 1998; De Noble, Jung & Enrlrch, 1999). Entrepreneurial self-efficacy has been described as a distinctive trait that distinguishes an entrepreneur from a non-entrepreneur. Barbosa et al., (2007) asserted that it is a major attribute that has a significant influence on entrepreneurial intention.

The GEM (2018) survey on adults between the ages 18 to 64 in 49 economies with regards to the proportion of fear of failure of people seeing business opportunities, the statistics show that

35.2% of people seeing business opportunities in the United States would be discouraged from creating a business as a result of fear of failure, 37.7% in United Kingdom, 39.9% in Switzerland, 41.7% in China, 46.4% in Japan, 42.3% in Canada, 16.6% in Angola, 64.2 % in Morocco, 34.5% in Sudan, and 50.1% in India to mention a few. The GEM Audit Population Survey (2017) revealed unavailability of current data for some countries, Nigeria inclusive, as the figure of fear of business failure stands at 16.33% as at 2013. Fear of failure is associated with low entrepreneurial self-efficacy (ESE) (Wennberg, Pathak & Autio, 2013) and a major barrier to business startups (Oner & Kunday, 2016). ESE measures one's confidence and capability to launch an entrepreneurial startup successfully (McGee, Peterson, Mueller & Sequeira, 2009). Further, ESE is recognised as a key precursor to new business intentions (Barbosa, *et al.,* 2007). ESE is often referred to as the outcome or entrepreneurial intentionality of individuals after being introduced to entrepreneurship education (Moberg, Vestergaard, Fayolle, Redford, Cooney, Singer, Sailer & Filip, 2014).

Previous research on the influence of ESE has been explored. For example, development of entrepreneurial self-efficacy through entrepreneurship education (Wilson, Kickul & Marlinno, 2007; Pihie & Bagheri, 2010; 2011; Chou, Shen & Hsiao, 2011; Piperopoulos & Dimov, 2015; Maritz & Brown, 2013; Malebana & Swanepoel, 2014), ESE scale measurement (McGee *et al.,* 2009; Karlsson & Moberg, 2013), ESE and business start-up (Drnovsek, Winset & Cardon, 2010), ESE and entrepreneurship intention (Pihie & Bagheri, 2013; Naktiyok, Karabey & Gulluce, 2010; Tsai, Chang & Peng, 2016), ESE and gender (Mueller & Dato-on, 2013; Henry, Treanor & Sweida, 2013; Watson, Gatewood, Lewis, Dempsey & Jennings, 2014), ESE and locus of control (Ayodele, 2013). Despite all these works, it is noteworthy that there is dearth of research study on entrepreneurial self-efficacy as a predictor of entrepreneurial readiness at TVET institutions in Sub-Saharan Africa particularly in Nigeria. Maritz and Brown (2013) suggested that future research study becomes imperative to untangle other factors and impacts that influence and interact with ESE.

Previous research shows that among all personality characteristics, ESE is the most effective trait that can predict entrepreneurial actions (Van Ness & Seifert, 2015). Current empirical findings from research conducted on the relationship between ESE and entrepreneurial readiness revealed that ESE is a strong determinant of entrepreneurship behaviour (Darmanto & Yuliary, 2018; Piperopoulos & Dimov, 2015; Barbosa *et al,* 2007). Similar outcomes have been identified in some developing countries. In Indonesia, Hermawan, Soetjipto and Rahayu, (2016) found that ESE is a strong determinant of entrepreneurial literacy and entrepreneurship

interest of vocational high school students. In a similar study conducted by Islami, Elmunsyah and Muladi, (2017), the scholars found that a higher self-efficacy can increase entrepreneurship readiness among students of vocational high school in Indonesia. Further, Dardiri, Irsyada and Sugandi (2019) also reported that self-efficacy is a strong motivator of entrepreneurship readiness in the age of 4th Industrial Revolution. In Pakistan, Memon, Soomro and Shah (2019) found that a significant association exists between ESE and other components of entrepreneurial readiness such as; instrumental readiness, risk propensity, entrepreneurial knowledge and entrepreneurial experiences.

Many studies suggest that training and education are required for an individual's ESE to be elevated, thus, increasing the rate of entrepreneurial activities (Maritz & Brown, 2013; Piperopoulos & Dimov, 2015). In Taiwan, Chou, Shen and Hsiao (2011) demonstrated that ESE has a significant effect on learning behavior through entrepreneurship education among students of TVET college. The study conducted in Malaysia by Darmansetiawan (2019) indicated that ESE plays a strong mediating role between education and entrepreneurship behaviours among actors of SMEs. This concurs with the longitudinal study conducted by Jordaan (2014) among nascent necessity-entrepreneurs in South Africa. The study revealed that ESE is an important contributor towards venture creation. Furthermore, Ibrahim *et al.,* (2016) found that both leaders' strategic improvisation and entrepreneurial self-efficacy plays a significant role in corporate entrepreneurship in Nigeria's tertiary institutions. The study conducted by Pihie and Bagheri (2011) among students of TVET institutions in Malaysia suggest that ESE dimensions can be used in the development of both curriculum content and teaching strategies. Students of TVET can become successful entrepreneurs if oriented towards the process of ESE business start-up, and this can be achieved through effective integration into the entrepreneurship education at TVET institutions in Nigeria.

Mc Gee *et al.* (2009) affirmed that entrepreneurial self-efficacy is a multi-dimensional construct. For instance; De Noble, *et al.* (1999) identified six dimensions of entrepreneurial self-efficacy which include, risk and uncertainty management skills, innovation and product development skills, interpersonal and networking management skills, opportunity recognition, procurement and allocation of critical resource, development and maintenance of an innovative environment. Earlier, Chen, *et al.* (1998) had proposed and identified five entrepreneurial self-efficacy skills that can be acquired for venture creation which includes marketing skills, innovation skills, management skills, risk-taking, and financial control. These skills factors have been identified to have positive relationship with entrepreneurial intention (Kickul &

D'Intino, 2005). This study adopted the entrepreneurial self-efficacy task-specific process of business success and developing nascent entrepreneurs as identified by Goic and Muller (2003), which was originally conceptualised by Stevenson, Roberts, and Grousbeck, (1985). The process includes four phases of enterprise growth: Searching, Planning, Marshalling, and Implementing as shown in Figure 3.5 below.

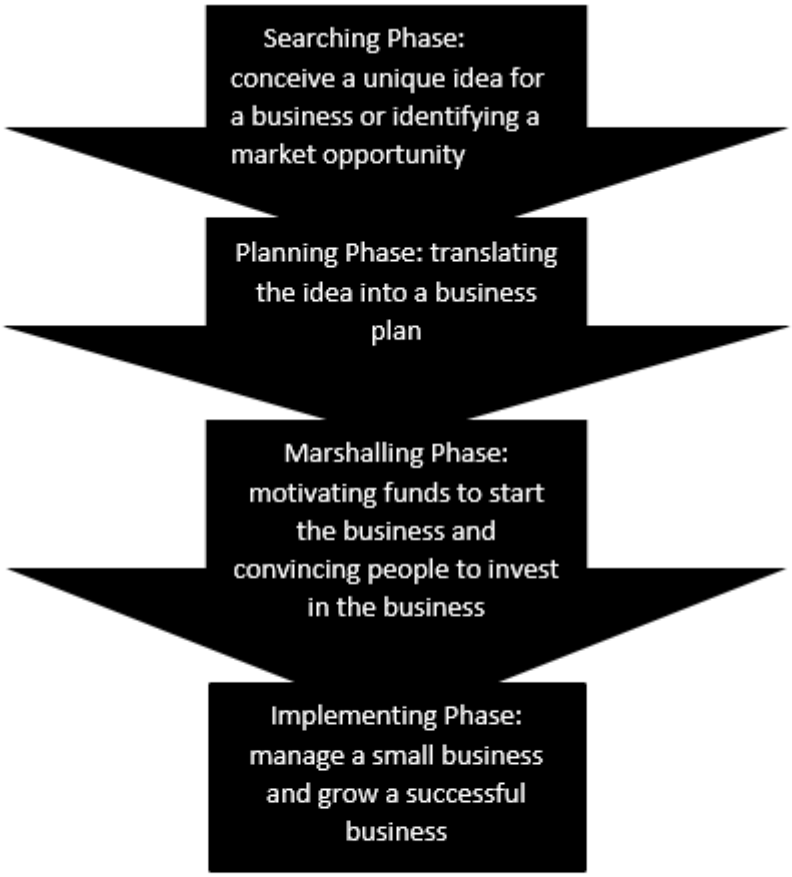

Figure 3. 5 Entrepreneurial self-efficacy phases of venture creation

Source: Cox, Mueller, and Moss (2002, p.12)

The searching phase refers to how a unique idea is conceived or identification of market opportunities by an entrepreneur. The planning phase describes how the unique idea can be designed into a business plan or proposal. The Marshalling phase involves raising funds to start the business, convincing other people to invest in your business idea and getting them to team up with the business. The implementing phase is about effectively managing and growing the business successfully (Cox, *et al.,* 2002).

Research on ESE among students of vocational institutions is well documented. For example, Maritz and Brown (2013) used a mixed method longitudinal and effectuation scale to measure

ESE scores, and found that involvement in vocational entrepreneurship education programmes has positive significant association with all participants involved. In a similar study conducted in China by Lu and Li (2014), the authors found that graduates of vocational colleges were more interested in starting businesses than graduates from the universities. These narratives concur with the empirical findings of Pihie and Bagheri, (2011) on Malaysian TVET secondary school students. The study found that students' entrepreneurial self-efficacy is significantly associated with aspect of creating new product and business opportunities. This stresses the necessity for entrepreneurship education to focus on students' self-esteem behavior and strengthen their self-confidence to become entrepreneurs (Pihie & Bagheri, 2011). However, there is no evidence of research study on ESE searching, ESE planning, ESE marshalling and ESE implementing as determinants of entrepreneurial readiness among students of TVET institutions in Nigeria.

Setiawan (2013) also conducted an empirically research on 199 university undergraduate students using the 6 dimensions of entrepreneurial self-efficacy developed by De noble *et al* (1999). The study found that the general level of entrepreneurial self-efficacy of the students is high but the perception of coping with unexpected challenges is low. This is in agreement with Pihie and Bagheri (2010) that students may not have sufficient interest to venture into business due to challenges. This further stress the importance of entrepreneurship education in developing students' entrepreneurial mindset and empowering them with knowledge and skills (Setiawan, 2013), in order to overcome business challenges. Previous empirical study by Setiawan (2012) revealed that entrepreneurship education positively corelated with entrepreneurial characteristics amongst students. However, Memon *et al.*, (2019) found that entrepreneurship education does not enhance students' entrepreneurial self-efficacy.

This inconsistency informs further investigation between entrepreneurship education and entrepreneurial self-efficacy especially in developing countries like Nigeria. Entrepreneurship education is becoming more relevant especially in TVET context (Avis, 2012). But educating nascent entrepreneurs is one of the problems of entrepreneurship education (Pihie & Bagheri, 2010). This is due to the fact that researchers are yet to provide a conceptual framework (Fayolle, Gailey & Cassas-Clerc, 2006) of how to best achieve the objectives of entrepreneurship education (Maritz and Brown, 2013). Regrettably, the investigation of the dimensions of ESE among students of TVET institutions in Nigeria remains a gap. This study aims to fill this gap by examining psychosocial determinants of entrepreneurial readiness at

three selected TVET institutions in Nigeria. This investigation will assist in proposing a conceptual framework of entrepreneurship education for TVET institutions in Nigeria.

3.4 Individual entrepreneurial orientation (IEO)

IEO is one of the dimensions of entrepreneurship and its epistemology could be traced to the research study of Mintzberg (1973), Khandwalla (1976), and Miller (1983) on entrepreneurial orientation (EO). These scholars argued that EO is a decision-making process of firm managers by engaging in entrepreneurial activities (Colvin & Slevin, 1989). The concept of EO is operationalised in three dimensions of risk-taking, innovativeness, and proactiveness (Covin, 2013). Sequel to this, Bolton and Lane (2012) affirmed that EO can be measured at individual level, due to its multi-dimensional postures. This explains the viability of IEO as a behavioural construct that drives entrepreneurial pursuit (Bolton & Lane, 2012).

The European 2020 agenda aims to fully integrate innovation and entrepreneurship into the education system. Similarly, the European Commission (2012) identified innovativeness and risk-taking as propensities of entrepreneurship education. Wennberg, *et al.,* (2013) emphasised that entrepreneurship entry is strongly inclined with risk-taking, and the aversion of risk hinders entrepreneurship activities. This is in line with the position of Olajide, (2015) that inability to take risk is one of the challenges students faced in venturing into a business in Nigeria. Okurumeh (2014) added that risk-taking skills and innovative skills are determinants of self-employment. Wiklund and Shepherd (2005) also stated that risk-taking, pro-activeness and innovativeness has a significant effect on the performance of an entrepreneur's business. Risk-taking, innovativeness and pro-activeness have been described as the propensity of individual entrepreneurial orientation (IEO) in the practice of business decision-making process (Bolton & Lane, 2012).

Empirical studies have shown that IEO dimensions such as risk-taking, innovation and pro-activity have positive and significant relationship on entrepreneurship entry through entrepreneurship education (Ibrahim & Lucky, 2014; Koe, 2016). The link between IEO dimensions and entrepreneurship education is an indication that entrepreneurship can be taught. This is evident in the work of Bandera, Collins and Passerini (2018) who reported that risk tolerance significantly increases in three distinct entrepreneurship courses among university students in the United States. In a related study, Robinson and Stubberud (2014) reported that there is increased inclination towards entrepreneurship start-up among students from Norway

and America. The authors found that risk-taking, innovativeness and proactiveness were influenced after a post-test entrepreneurship training. A cross sectional study conducted by Shamsudin, Mamun, Nawi, Nasir and Zakaria (2017) among students from Malaysia, China and India revealed that entrepreneurship education moderated between entrepreneurship intention and innovativeness and risk-taking propensity. In the same vein, Chimucheka (2015) argued that the innovativeness of Small Medium Enterprise owners in Eastern Cape, South Africa, can be attributed to entrepreneurship education, and entrepreneurship education also improves their risk-taking ability. This finding is similar to the study conducted by Ramoni (2015) on university students in Nigeria. The study reported that entrepreneurship education, risk-taking propensity and innovation could influence entrepreneurship interest in venture creation.

Studies have also revealed the link between entrepreneurship readiness and components of IEO. Using the theory of planned behavior, Iqbal, Melhem and Kokash (2012) found university students' readiness to face market challenges and risk-taking after the investigation of entrepreneurial perception. Similarly, Ebrahim and Schott (2014) identify risk-taking propensity as a predictor of entrepreneurial readiness. Braum and Nassif (2019) empirically demonstrated that individual entrepreneurial orientation positively influences entrepreneurial readiness. Saputri, Wardana and Kusdiyanti (2019) found that entrepreneurial personality has positive and significant influence on entrepreneurial readiness However, Ibrahim and Lucky (2014) noted that these skills are lacking among graduates of TVET institutions in Nigeria. Similarly, Aminu (2016) asserted that lack of integration of IEO propensities such as risk-taking, innovation and pro-activity in the entrepreneurship curriculum is one of the limitations of entrepreneurship education in Nigeria. IEO dimensions have been described as specific skills that allows an individual to create entrepreneurial intention, launch an uncertain startup, and predict future opportunities (Schillo, 2011; Renko, Tarabishy, Casrud & Bramback, 2015). Risk-taking, innovativeness, and proactiveness remain the three predominant factors that have demonstrated reliability and validity in existing studies of EO (Bolton & Lane, 2012).

Despite these investigations, research on individual entrepreneurial orientation has not been extensively cultivated (Vogelsang, 2015). Scholars have suggested that there is need to improve the entrepreneurship education to concentrate on weak entrepreneurial propensity determinants of students' entrepreneurial readiness (Gurol & Atsan, 2006; Koe, 2016). There is no evidence in literatures on the examination of IEO and students' entrepreneurial readiness at TVET institutions in Nigeria. One of the objectives of this study is to examine IEO

propensities (risk-taking, innovativeness and proactiveness) as determinants of entrepreneurial readiness at three selected TVET institutions in Nigeria.

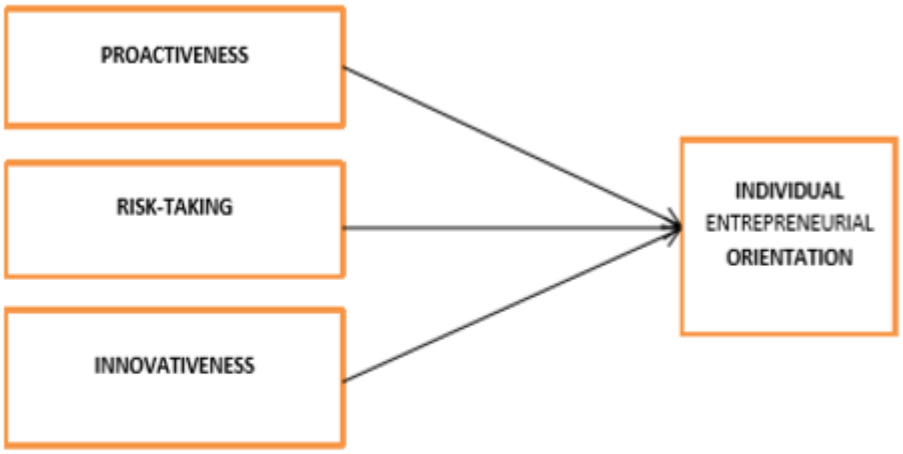

Figure 3. 6: Propensities of Individual Entrepreneurial Orientation

Source: Adapted from Koe (2016, p.4)

Most of the empirical studies on developing entrepreneurship skills for self-employment mainly employed the examination of entrepreneurship education impacts on entrepreneurial intention for self-employment (Top, Çolakoĝlu & Dilek, 2012; Sanchez, 2013; Bakar, Islam and Lee, 2014; Ibrahim, Bakar, Asimiran, Mohamed & Zakaria, 2015; Lackĕus, 2015). Empirical findings with respect to the relationship between IEO and entrepreneurial readiness among students of TVET institutions in Nigeria remains a missing link in academic discipline. This study aims to fill this gap by examining psychosocial determinants of entrepreneurial readiness at three selected TVET institutions in Nigeria. This investigation will assist in proposing a conceptual framework of entrepreneurship education for TVET institutions in Nigeria.

3.5 Relationship between ESE and IEO

Through different empirical lenses, ESE has been described as a major precursor to entrepreneurial activities (Zhao *et al.*, 2005; McGee *et al.*, 2009). It is the belief of confidence to surmount a task (Bandura, 1999). IEO is conceptualised by Bolton and Lane (2012) to express entrepreneurial skills such as risk-taking, innovativeness and proactiveness. It is the business decision making at individual level. ESE is a perceived ability of an individual confidence to perform a task (Bandura, 2001). It is an innate characteristic of an individual to initiate a plan. IEO on the other hand is focused on individual orientation of these entrepreneurial skills (risk-taking, innovation and proactiveness) for business decisions. A

positive significance has been found to occur between self-efficacy and EO (Alam, Mohd, Kamaruddin & Nor, 2015). Previously, Shane, Locke and Collins (2003) provided the evidence for the mediating role of self-efficacy between personal characteristics and EO. However, Poon, Ainuddin and Junit (2006) found a negative association between self-efficacy and proactive behavior. This inconsistency in literature justifies the essence of this study, as there are few studies on the relationship between ESE and IEO. Schunk and Zimmerman (1997) showed that students with higher self-efficacy have more persistence to work harder when faced with difficulties. Thus, a potential entrepreneur with high self-efficacy is likely to venture into a business whether he or she possesses the necessary skills or not (Chen et al., 1998; Arora, Hayne & Laurence, 2011). Furthermore, Krueger and Dickson (1994) posited that personal entrepreneurial skills of an individual can be more effective for business than the learned skills themselves. These assertions further support Bandura's contention that an individual entrepreneurial behavior in terms of knowledge and skills is determined by his or her self-efficacy. However, Kickul, Gundry, Barbosa and Whitkanack, 2009) argued that ESE is not but one of the potential options an individual has for entrepreneurial action. This also goes to show the importance of studying EO at individual level (Bolton and Lane, 2012) to avail more entrepreneurial options for business startups.

3.6 Entrepreneurial readiness

Entrepreneurial readiness relates to one's ability or willingness to take entrepreneurial action. Darmasetiawan (2019) argued that entrepreneurial readiness is determined by the general condition of an individual to respond to entrepreneurial activities. This supports the assertion of Lau, Dimitrova, Shaffer, Davidkov and Yordanova (2012). According to these scholars, entrepreneurial readiness is "an individual's cognitive attributes of capability and willingness to direct behavior in an entrepreneurial context". This definition pointed out that entrepreneurial readiness of an individual relies on the cognitive strength to discover various market opportunities and attain entrepreneurial success. This position conforms with the view of Shane, Locke, and Collins, (2012), in which, the authors asserted that the success of any business start-ups depends on the entrepreneurial readiness to turn idea or opportunities into commercial value. In other words, youth's entrepreneurial readiness is the ability to partake in entrepreneurial activities (Olugbola, 2017) The identification of opportunities towards entrepreneurial success remains a major concern for graduates of TEVT institutions.

It may be recalled that the basic aim of the establishment of TVET institutions is for the acquisition of entrepreneurial skills to become self-employed. However, majority of the TVET graduates are not self-employed against the basic mission of establishing TVET institutions (Wube & Dessie, 2017). It has been noted that the appropriate entrepreneurial skills for business creation and reduction of unemployment among the youth in Nigeria is yet to be identified (Ibrahim & lucky, 2014). Hence, graduates of this institutions are deficient in the required entrepreneurship skills and unable to start a business (Audu, Kamin & Balash, 2013). Some research investigations on entrepreneurship skills submit that graduates of TVET institutions in Nigeria are not entrepreneurially ready for the future of work (Okorocha, 2014; Okoye & Okwelle, 2014; Edokpolor & Owenvbiugie, 2017). There is no doubt in the fact that entrepreneurial readiness among the youth has been a critical global concern due to low business spin-offs.

Scholarly works have submitted that there are different components of entrepreneurial readiness towards starting a new venture (Coduras *et al.,* 2016; Schillo, Persaud & Jin, 2016; Olugbola, 2017; Darmasetiawan, 2019). This study adopted three psychosocial determinants of entrepreneurial readiness, namely: entrepreneurship education, entrepreneurial self-efficacy and individual entrepreneurial orientation. These components are referred to as psychosocial factors of entrepreneurial success (Krumrei-Mancuso, Newton, Kim & Wilcox, 2013). Recent research submits that there is no holistic, scientifically grounded instrument to measure readiness for entrepreneurship (Coduras, Saiz-Alvarez, & Ruiv, 2016). This study aims to measure the influence of psychosocial determinants of entrepreneurial readiness at three selected TVET institutions in Nigeria.

3.7 Theoretical frameworks

The composition in this section presents the underpinning theories of the study with the aim to comprehend psychosocial determinants of entrepreneurial readiness. This investigation will further assist in proposing a conceptual framework of entrepreneurship education at three selected TVET institutions in Nigeria. The stated hypotheses were also considered in this section.

3.7.1 Theoretical models

Different literatures exist on the perceived nature of entrepreneurship or an entrepreneur (Smith & Chimucheka, 2014). Entrepreneurs have been identified to be creative and imaginative (Liang, Chang, Liang, & Liu, 2017), innovative (Schumpeter, 1934), initiative taker (Aslund

& Backström, 2015), risk taker (Block, Sandner & Spiegel, 2015), and decision maker (Maart-Noelck & Musshoff, 2014). These assumptions suggest that it is important to develop the entrepreneurial skills of the citizens since entrepreneurship is no doubt vital to economic development of any nation (Smith & Chimucheka, 2014). This concurs with the assumption of Casson's theory (1982) that the entrepreneur must acquire different skills to be able to manage scarce resources. The acquisition of different sets of skills for entrepreneurs gave rise to the development of various theoretical model of knowledge acquisition. This study is underpinned by the Human Capital Theory. The Kolb's theory of experiential learning and Theory of Planned Behaviour were adopted to sustain the concepts of ESE and IEO.

3.7.2 Human capital theory

The epistemology of the human capital theory could be traced to the research study by Theodore Schultz in 1960. Schultz propounded that individuals spend money on themselves in different ways which includes among others purchasing health care, having further education, getting information, or making a choice of employment etc. According to Schultz (1971), all these forms of expenditure are regarded as investment for the future which justifies the current action. The theory suggests that individuals invest in education and training with the aim of making a higher income in the future (Becker,1964). The theory of human capital has been widely adopted to explain various phenomenon. For instance, health (Grossman, 1990), investment and economic growth (Wolff, 2000), productivity and growth (Bowlus & Robinson, 2012), technology (Ganotakis, 2012), organisational performance (Felicio, Couto & Caiado, 2014), and education (Gillies, 2015) to mention a few. The latter is a consistent concept that has predominantly sustain the human capital theory. Based on the work of Shultz (1971); Sakamota and Powers (1995), the Human Capital Theory assumed that people's acquired stock of cognitive development is the basis for economic development. Becker (1964) argued that the accumulation of educated individuals, together with training skills is a crucial drive for sustainable economic growth. The theory suggests that human being acquire knowledge and trainings through education, and education increases the productivity and incomes of individuals; therefore, education is an investment (Tan, 2014). Adom and Asare-Yeboa (2016) identified level of education, area of education, business and training and work experience as elements of human capital. These dimensions better explain the essence of adopting human capital theory to underscore the influence of entrepreneurship education on students' entrepreneurial readiness at selected TVET institutions in Nigeria.

This study is underpinned by the human capital theory. This is based on the fact that entrepreneurship education (investment) has been identified as the drive for the acquisition of entrepreneurial skills towards business creation and economic growth (Sanchez, 2013; Martins & Brown, 2013; Fayolle, 2018). The link between the concept of human capital and success has gained the interest of many researchers in the field of entrepreneurship (Unger *et al.*, 2011). Successful business enterprise and economic growth are characterised by stock of human capital. This is because business performance is motivated by individual's intellectual capital. Additionally, the success or failure of business lies in formal education and business knowledge (Adom & Asare-Yeboa, 2016). One area of formal education such as entrepreneurship education has been proven to be consistent with human capital formation. Therefore, entrepreneurial success could be determined by the level of human capital development or investment in entrepreneurship education.

Previous research works has examined the relationship between human capital and entrepreneurship (Nyberg & Wright, 2015: Marvel, Davis & Sproul, 2016; Eesley, 2016). Due to the numerous entrepreneurial skills required by entrepreneurs, entrepreneurship education has been identified to be multidimensional (Fayolle, 2013). A considerable number of research focus has been committed to what should be the required skills? where should skills be acquired? when should it be acquired? and how should it be acquired? (Zang, Duysters & Cloodt, 2013; Olorundare & Kayode, 2014; Penaluna & Penaluna, 2015; Fayolle, 2018). These underlying questions delineate entrepreneurship education into different aspects. Different aspects of entrepreneurship education have been investigated. For example: development of entrepreneurship education (Fayolle, 2013; Bakar *et al.*, 2014), entrepreneurship education and intention (Sanchez, 2013; Zang *et al.*, 2013: Piperopoulos & Dimov, 2015), entrepreneurship education and venture creation (Lackéus & Middleton, 2013). While the latter is the focus of this study, it is worthy of note that the focal interest of all these studies is the development of entrepreneurship education framework for acquisition of entrepreneurial skills towards business start-ups. Further, entrepreneurship education appears to be the most important antecedent of venture creation. In the light of this, most academic institutions are in dire need of entrepreneurship education for the development of human capital (Abid *et al.*, 2017). In essence, entrepreneurship education is a human capital asset as it offers innovative skills for economic development (Adom & Asare-Yeboa, 2016).

The human capital theory also suggests the acquisition of innovative skills for economic development (Olaniyan & Okemakinde, 2008) considering the advent of the 4th Industrial

Revolution. Innovative skill is described as the most essential trait of successful entrepreneurs especially for students of TVET institutions. Schumpeter (1934) marked innovation as the catalyst for entrepreneurship. Schumpeter's theory suggests that the growth of any business enterprise is a function of innovation, and the theory of entrepreneurship does not exist without innovation. Scholarly works have advanced the link between innovation and human capital achievements. Berry and Glaeser (2005) demonstrated that human capital migration is a function of innovation, and innovation attracts educated personalities occupying a specific region. This affirms the close relationship between education and innovation, which is a crucial skill to entrepreneurs. Olaniyan and Okemakinde (2008) stated that countries such as Taiwan, China, Hong Kong and Singapore have been able to put their names on the global map in terms of technological advancement due to huge investment in education. The scholars posited that education is an input of entrepreneurial force to create new technology. Van-Der-Berg, (2001) observed that the most advanced countries in technological domain possess the most educated population. To develop entrepreneurial skills and prepare nascent entrepreneurs for the future of digital environment, entrepreneurship education must be considered as a source of human capital formation particularly for TVET institutions.

However, the theory of human capital has been criticised for absence of realism as a result of a single theoretical lens (Marginson, 2019). The human capital theory is criticised for not addressing external effects to comprehend the association between education and work. According to Marginson (2019), the theory failed to explain the reasons for inequalities in income which may not necessarily arise from the level of education. This follows the assumption of the signaling theory, which states that education only classifies individuals according to their intelligence and commitment (Sessions & Brown, 2005; Tan, 2014). These intelligence and commitment levels inform the productivity level which also predicts the level of income Further, it is argued that the human capital theory underscores two heterogenous variables, education and work, as though they are homogenous (Marginson, 2019).

It is worthy of note that the theory of human capital is not only applicable to education, much empirical research has focused on its relevance to educators and education policies (Sweetland, 1998). Educators require training to build their confidence and enhance their creative teaching skills. Sound government policies are also required to address changing technology and promote the introduction of modern facilities to develop students' skills. Nurturing competent human capital for entrepreneurial readiness is thus of increasing concern to educators and governments (Martin, McNally, & Kay, 2013). Entrepreneurship education is becoming more

imperative due to the rate of unemployment amongst the youth (Akinola, 2012). In order to stimulate entrepreneurial competence among students, entrepreneurship education must focus on the advancement of knowledge and skills (theory), and practical applications such as experiential learning (Lame & Yusoff, 2013).

3.7.3 Kolb's experiential learning

Experiential learning was conceptualised by Kolb (1984) as a pedagogical strategy for learning. The Kolb's experiential learning approach links education, work, and personal development for the purposes of skills acquisition and a creative mindset. It posits the need for an experiential learning process that links the classroom and the 'real world' and focus on applying theory in context, thereby supporting critical thinking and problem-solving skills. Technical institutions thus need to adopt initiatives that enable their students to practically apply entrepreneurial skills (Kolb, 2014). There is an increasing consensus that entrepreneurship can be learned (Henry *et al.*,2005). This reflects the study of entrepreneurship in education. Thus, a practical approach that focuses on business problems is essential for entrepreneurship education (McFarland, 2017). Hoppe (2016) opined that "entrepreneurship is best taught through hands-on practice and testing of concrete activities". Scholarly works have suggested that application of active learning is crucial to solving business problems. For instance: case studies discussions and business simulations (Chang & Rieple, 2013), e-learning (McFarland, 2017), venture creation programs (Lackéus & Middleton, 2013), and mentoring (Abid *et al.,* 2017).

In the report of the Business Innovation and Skills Research Report (BISRP), as presented by Johnson, Mukhuty, Fletcher and Snowden (2015), international organisations such as OECD, European Union (EU) and GEM declared in their reports that delivery interventions that include experiential learning may best provide the acquisition of entrepreneurship skills successfully. The effective acquisition of these skills implies a cyclical movement along the Kolb's learning cycle by the students. The figure below shows the Kolb's experiential learning cycle as pedagogical strategy for entrepreneurship education at selected TVET institutions in Nigeria.

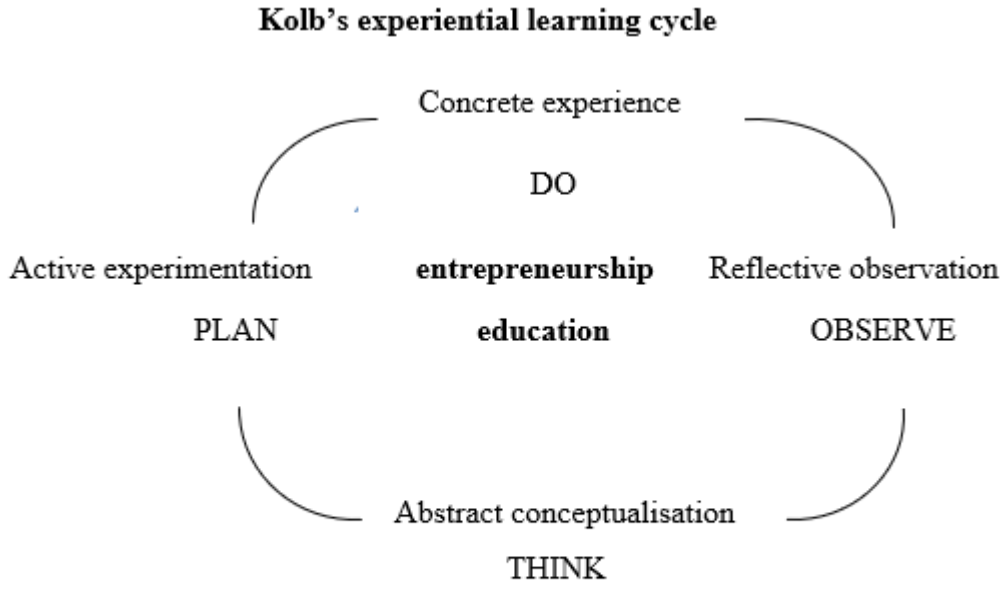

Figure 3. 7 Kolb's model

Source: Adapted from Healey and Jenkins (2000 p. 187)

3.7.3.1 Concrete Experience: this mode is where the learner is actively experiencing an activity e.g. field class, laboratory. The acquisition of entrepreneurial skills is best suited during practice such as workshop; seminar, and internship. Students of vocational institutions tend to assimilate better in practical training or learning by doing (Bell, 2015).

3.7.3.2 Reflective Observation**:** learners in this category consciously reflect back on the learning experience previously had through observation of the process. Anon (2016), noted that reflection about learning encourages life-long learning. It is a form of mental process that provides guidance for skillful application of idea (Kemp, Munk & Gower, 2016). Idea development is a key element of business opportunities.

3.7.3.3 Abstract Conceptualisation**:** unlike concrete experience, individuals are characterised by logical approach to generate ideas in order to come up with a solution. They prefer the use of systematic planning and quantitative analysis (Kolb, 1984).

3.7.3.4 Active Experiment: the active initiative focuses on effectively influencing people and changing situations. This mode appreciates interpersonal relationship that allows individual to influence the society. They also value the aptitude to manipulate their environment to provide purposeful results. This trait is a strong element of entrepreneurial self-efficacy in managing people and resources for business sustainability. Kolb's model views that students are from

different field of studies, and entrepreneurship training should focus on satisfying individual needs (Koe, 2016). Common entrepreneurship education curriculum is no longer suitable as students from different fields have shown different IEO ability (Koe *et al.*, 2015).

The results from the findings of Piperopoulos and Dimov (2015) suggested that the nature of entrepreneurship course in terms of context and delivery can influence the activation of self-efficacy in students. Many research studies have suggested that experiential learning should be integrated into entrepreneurship pedagogical strategies since entrepreneurship is action oriented (Lame & Yusoff, 2013; Olorundare & Kayode, 2014; Fagge, 2017).

This proposed study also takes into consideration the learning styles proposed by Kolb (1984) (assimilative, accommodative, convergence, and divergence). The table below shows the relativity of the learning styles to entrepreneurship skills.

Table 3. 1: Kolb's learning model

Learning styles	Entrepreneurial skills
Assimilative styles; ability to think inductively with ideas and abstract conception	Idea conception is a value of business identification in ESE
Accommodative styles; learners here are risk takers and identify business opportunities, and adapt to changing situations	Risk–taking, opportunity identification and adaptive ability are key factors of IEO for successful entrepreneurs
Convergent styles; learners have the ability to make decisions, apply practical knowledge to solve problems	Ability to make business decision and solve real life problems through the application of practical knowledge are attributes of an entrepreneur with ESE
Divergent styles; learners are referred to as brain-stormers due to their creativity and imaginative ability to generate various qualities from a concept especially in technical task	Creativity leads to innovation, and innovation distinguishes an entrepreneur

Source: Adapted from Kolb (1984).

The incorporation of the learning modes as posited by Kolb (1984) into the entrepreneurship education of technical colleges in Nigeria can help prepare the students for entrepreneurial work-readiness.

3.7.4 Theory of planned behaviour

The study of human behaviour has long gained the interests of many scholars (Vogelsang, 2015; Kautonen, Gelderen & Fink, 2015) as it helps to determine preceding factors of human

behaviours. The theory of planned behavior has emerged as one of the most dominant and acceptable conceptual frameworks for the study of human behaviour (Ajzen, 2001). This is due to its conceptual and methodological understanding of predicting entrepreneurial readiness and behavioural actions. According to Ajzen (1991), there are three underlying assumptions guiding the human behavior: attitude towards the behavior (favourable or unfavourable), subjective norms (opinions of social relations such as family and friends), and perceived control over the behaviour (ease or impossibility of performing the act). These three variables have been found as antecedents to explain the nature of actual behaviour (Ajzen, 1991) and differences in entrepreneurship behaviour (Kautonen *et al.,* 2015).

By testing the theory of planned behaviour, Kautonen, Gelderen and Tornikoski, (2013), found that perceived behavioural control and social norms are significant determinants of entrepreneurial intention among the employed groups in Finland over two years. Adopting the planned behaviour approach, Carr and Sequeira (2007) used a symbolic interactionist view to empirically test mediating effects of attitudes of nascent entrepreneurs, perceived family support and ESE. Results proved significant effects of prior exposure to family business on entrepreneurial intention of 308 individuals. Similarly, an empirical study on Romanian students by Shook and Bratianu (2010), found a positive association between self-efficacy and venture creation interest, and entrepreneurial intent through the lens of theory of planned behaviour. Empirically operationalising the theory of planned behaviour, Kautonen *et al.* (2015) examined 969 adults from Austria and Finland. All hypothesised variables were found to be significant and positive: attitude, subjective norm and behavioural control were able to predict 59% variations in entrepreneurial intentions. Kautonen *et al.* (2015) concluded that the theory of planned behaviour also possesses the empirical validity of predicting subsequent entrepreneurial intentions and business start-up behaviour.

Therefore, the theory of planned behaviour is found valid in analysing the model of ESE for entrepreneurial readiness as developed by Cox, *et al.* (2002). One of the focus of this study is to develop potential entrepreneurs for the future of work through entrepreneurship education at selected TVET institutions in Lagos Metropolis Nigeria. There is dearth of research studies on conceptual framework of entrepreneurship education for TVET institutions in Nigeria.

It should, however, be cleared that the crucial element in the theory of planned behavior is the intention of an individual to perform a given task (Ajzen, 1991). However, it has been argued that it is not enough to have intention but the readiness or actual behaviour (Ajzen, 2002) which

motivates the potential to start a business (Kautonen *et al.*, 2015). This assumption is consistent with the work of Souitaris, Zerbinati and Al-La-ham, (2007) on science and engineering students from London and France. The study found that intention to become self-employed was not related to propensity of becoming nascent entrepreneurs. The reason was attributed to the time-lag between intention and behaviour i.e. the period between students' graduation and starting a business.

Ajzen (1991) referred that the concept of perceived behavioural control is most compatible with perceived self-efficacy which influences behavioural actions. This assertion is in line with the findings of Tsai, Chang and Peng, (2016). The study revealed that ESE positively influence intention through attitude towards entrepreneurship and planned entrepreneurial control among Taiwan students. Further, the adoption of the theory of planned behaviour was helpful in the findings of Sabah (2016) among undergraduate students in Turkey. All the variables in the model of TPB were all significant towards intention particularly self-efficacy and personal attitude towards entrepreneurial behaviour. According to Ajzen (1991), behavioural intention could be expressed within a context of perceived control. i.e. an individual can decide either or not to perform the behaviour. The performance of this behavior may be a function of some available resources such as time, money, skills etc. The ESE task-specific as conceptualised by Cox *et al.* (2002) is best fit into the context of perceived control (Liñán, Santos & Fernández, 2011) which could also be determined by the context of opportunity such as entrepreneurship education towards behavioural achievement (Ajzen, 1991).

Based on the above discussions, ESE can influence entrepreneurial readiness, but research on ESE as a determinant of entrepreneurial readiness is limited. The figure below illustrates the interplay between perceived control or ESE as determinant of entrepreneurial readiness.

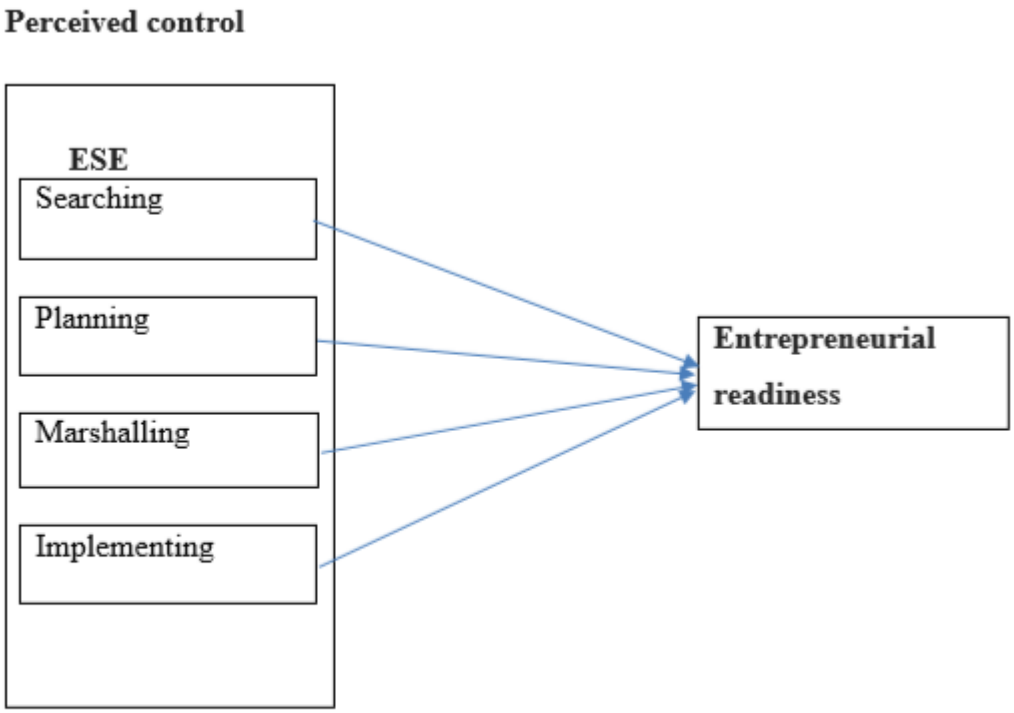

Figure 3. 8 Entrepreneurial self-efficacy and entrepreneurial readiness

Source: Author's compilation

The concepts of the theory of planned behaviour (attitude towards behaviour, subjective norm, perceived behavioural control) have been found to determine entrepreneurial intention (Izquierdo & Buelens 2011), through entrepreneurial self-efficacy (Kautonen, *et al.,* 2015). ESE is said to be the same as perceived control (Liñán, *et al.*, 2011; Ajzen, 1991). The figure above shows how ESE task-specific phases (perceived control) influence entrepreneurial readiness. As shown in Figure 3.8 above, the searching phase suggests how business idea or opportunity identification can influence entrepreneurial readiness. The planning phase involves how the business idea is translated into business proposal or plan to influence entrepreneurial readiness. The marshalling phase assumes that the ability to assemble business resources such as land, capital, customers, suppliers, employees etc. can motivate entrepreneurial readiness, and the implementing phase shows how the management of the business in terms of decision-making, innovation, market competition etc. influence entrepreneurial readiness. These stages of ESE are planned behavioural process because it involves searching for business opportunities, planning or translating the business opportunities into proposal, marshalling human and material resources and implementing or executing the business.

The theory of planned behaviour is one of the most predominant theories of human behaviour especially in the field of entrepreneurship. Entrepreneurial activity can be referred as a planned behaviour because the intending entrepreneur needs to organise, coordinates, and requires essential opportunities and resources (perceived behavioural control) before starting a business (Nishimura & Tristăn, 2011).

3.8 Hypothesised conceptual research model

This hypothesised conceptual model examines the crucial constructs that can prepare individuals for the future of work in the digital era. The Kolb's experiential learning theory is one of the learning theories that extensively discuss how entrepreneurial skills can be acquired through different teaching and learning modes. Koe *et al*, (2015) suggested that entrepreneurship education must take into consideration students' field of learning which is a function of the difference in the level of IEO ability. In other words, the entrepreneurship curriculum for students of science and technology should differ from that of business studies students. The acquisition of entrepreneurial skills such as IEO propensities: risk-taking, innovativeness and proactiveness is a function of required pedagogical strategies that suits the field of study. Considering the theory of planned behavior, ESE is a predictor of business intention or behavioural achievements (Ajzen, 2002). The key constructs of ESE task-specific and IEO propensities will be tested to determine their effectiveness in relation to students' entrepreneurship readiness or becoming nascent entrepreneurs. Figure 3.9 below presents the conceptual framework.

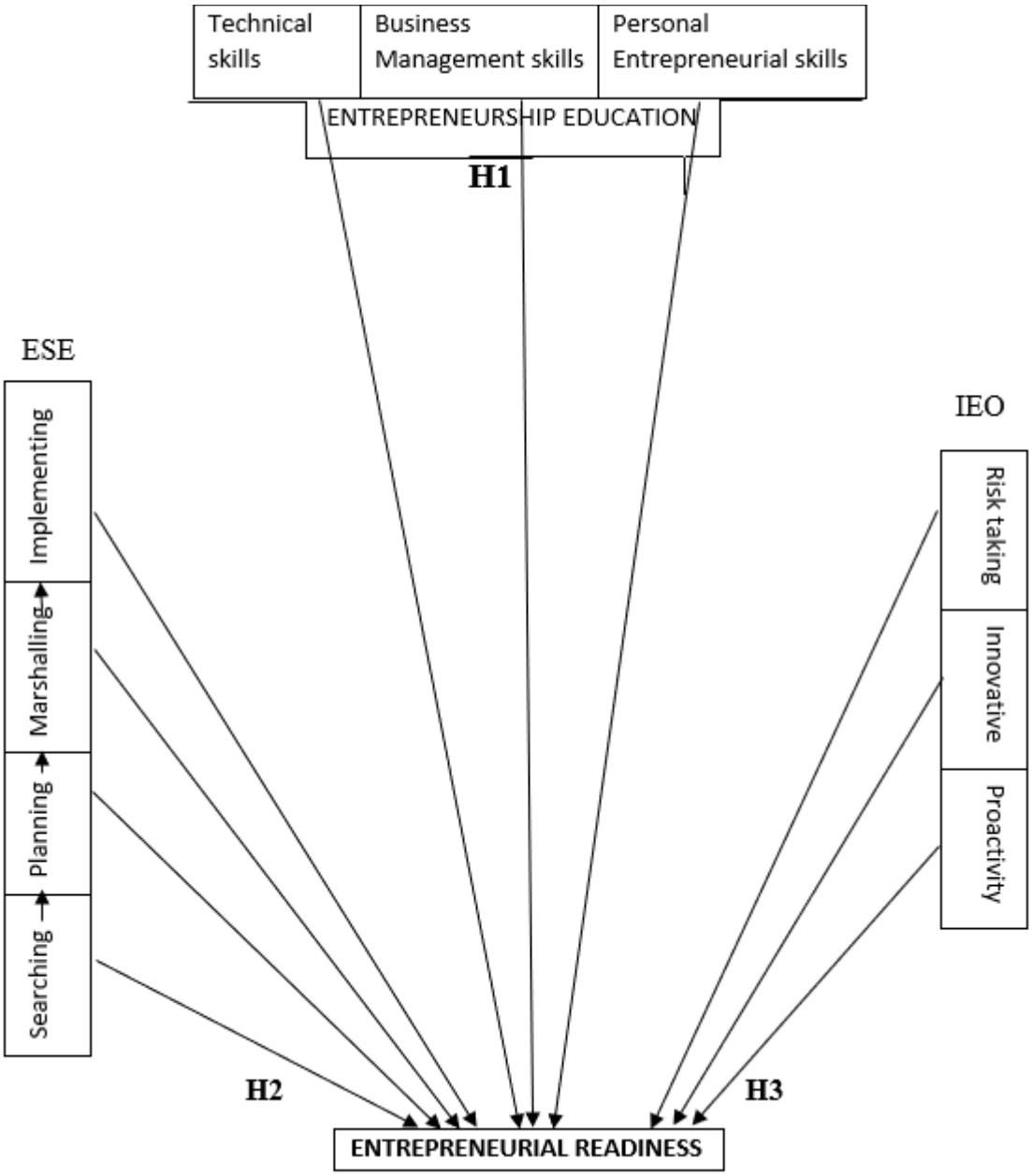

Figure 3.9 Conceptual framework of entrepreneurship education

Source: Author's compilation

The figure above revealed entrepreneurship education (EE), IEO and ESE as the independent variables, and entrepreneurship readiness is the dependent variable. The model shows that entrepreneurship education has three sub-constructs (technical skills, business management skills and personal entrepreneurial skills), also, ESE has four sub-constructs (searching, planning, marshaling and implementing), and IEO has three sub-constructs (risk-taking,

innovative and proactivity). The model shows the interaction between entrepreneurship education and entrepreneurial readiness (H1), relationship between entrepreneurial self-efficacy (ESE) and entrepreneurial readiness (H2), relationship between individual entrepreneurial orientation (IEO) and entrepreneurial readiness (H3). This gamut of entrepreneurial readiness is hypothesised as the framework of entrepreneurship education towards entrepreneurial readiness. This model will be tested to determine the impact on students' entrepreneurial readiness.

3.8.1 Research hypotheses formulation

Based on the composition in the model as depicted in Figure 3.9, the interaction among the constructs were examined below:

Various literatures on predictors of entrepreneurship readiness mainly focused on entrepreneurial intention through entrepreneurship education (Wilson, Kickul & Malino, 2007; Nabi & Holden, 2008; Piperopoulos & Dimov, 2015; Elmuti *et al.*, 2012; Almahry & Sarea 2018). Scarce literatures exist on psychosocial determinants of entrepreneurial readiness at selected TVET institutions in Nigeria. Therefore, the following research hypotheses were formulated:

H_1: Entrepreneurship education has influence on entrepreneurial readiness

According to Coduras *et al.* (2016, p.121), "The readiness for entrepreneurship of individuals is defined as the confluence of a set of personal traits (or features) that distinguishes individuals with readiness for entrepreneurship as especially competent to observe and analyse their environment in such a way that they channel their high creative and productive potential, so they may deploy their capability to dare and need for self-achievement". This definition suggests that students of TVET colleges require the combination of personality skills and business start-ups skills to become entrepreneurially ready. Previous studies have been conducted on the influence of entrepreneurship education on entrepreneurial readiness towards business start-ups. Astuti and Nasution (2014) empirically surveyed 190 entrepreneurs in Indonesia and found that entrepreneurs with a degree-level education have a greater level of entrepreneurship readiness compare to those with lower level education. Othman, Hashim and Wahid (2012) found that students of Malaysian university showed a significant entrepreneurial readiness, but the internal environment (lecturers, teaching facilities, curriculum) is a source of concern for entrepreneurship education. An empirical study conducted by Menzies and Paradi (2002) on venture readiness of engineering graduates in a Canadian University after taking

entrepreneurship courses revealed that there is no wide-spread commitment from the faculties of engineering to offer the students venture-creating skills and knowledge for the students to start their own business. The researchers suggested that further research is required to create entrepreneurship awareness as a viable career and readiness skills to nurture business start-ups among the students. The variations from these findings necessitated the presentation of hypothesis one.

H2: Entrepreneurial self-efficacy has influence on entrepreneurial readiness

ESE has been described as a multidimensional construct (Mueller & Goic, 2003; McGee *et al.,* 2009). This is as a result of its pivotal role in determining entrepreneurial readiness towards starting a new business in various forms (Piperopoulos & Dimov, 2015). The multidimensional scope of ESE has been appreciated in extant literatures. For instance; Chen *et al*. (1998) developed five factor model of marketing, innovation, management, risk-taking, and financial control. Zhao *et al.* (2005) relied on a single composite of ESE scale measure and discovered that entrepreneurial education is positively associated with higher ESE, and increased ESE positively related to entrepreneurial intention. Barbosal *et al.* (2007) examined four task-specific measure of ESE namely: opportunity identification self-efficacy, relationship self-efficacy, managerial self-efficacy, and tolerance self-efficacy. The authors' findings indicated that individual self-efficacy may differ according to the underlying dependent variable especially entrepreneurial intention and nascent behavior. Pihie and Bagheri (2011) found that students' ESE is most associated with aspect of developing new products and identifying market opportunities. Setiawan (2013) also demonstrated that as students' ESE increases, there was a low perception on facing unexpected business challenges. Pihie and Bagheri (2010) suggested that entrepreneurial self-efficacy propensities should be designed to determine curriculum content and pedagogical strategies These inconsistencies in literature inform the various definitions of ESE.

However, the ESE dimension as developed by Cox *et al.* (2002) which depicts an ESE stages of becoming nascent entrepreneurs from searching, planning, marshalling and implementing (Cox *et al.,* 2002) is yet to be comprehensively examined particularly in African context. There is dearth of research on the relationship between ESE and students' entrepreneurial readiness in TVET institutions in Nigeria. Based on this discussion, hypothesis two is developed.

H3: Individual entrepreneurial orientation has influence on entrepreneurial readiness

The concept of IEO measures the decision-making process of an individual towards entrepreneurial activities. IEO is expressed in three dimensions of risk-taking propensity, innovative propensity and proactive propensity (Bolton & Lane, 2012). These propensities measure individual level of entrepreneurial activities. Wennberg *et al.* (2013) argue that the ability to take business risk stimulates successful entrepreneurship entry. Okurumeh (2014) emphasised that risk-taking ability and innovative ability are predictors of self-employment. Many research studies have examined IEO propensities as factors of starting a new business (Renko *et al.,* 2011; Ibrahim & Lucky, 2014; Koe, 2016). A questionnaire survey conducted by Koe (2016) on 176 undergraduate students in Malaysia indicated that the quality of proactiveness and innovativeness positively contribute to the students' entrepreneurial intention, but risk-taking was not a significant factor on entrepreneurial intention. Koe (2016) also suggested that future research should examine entrepreneurial orientation at individual level through the design of entrepreneurship curriculum.

The relationship between IEO propensities and entrepreneurial readiness have been investigated (Tarabishy *et al.,* 2011; Iqbal *et al.,* 2012; Ebrahim & Nassif, 2019). But the study on the relationship between IEO and entrepreneurial readiness at selected TVET institutions in Nigeria remains a gap. Based on this, hypothesis three is stated.

3.9 Chapter summary

This chapter examined the conceptual and theoretical frameworks in relation to the study variables. Entrepreneurship education was discussed from global to local perspectives. The concept of EE, ESE, IEO and entrepreneurial readiness were espoused. This chapter also presents the historical development of entrepreneurship and entrepreneurship education in Nigeria. Related and guided theories of entrepreneurship education, and behavior were presented. The conceptual framework and the study formulated hypotheses were also analysed in this chapter.

The next chapter focuses on the concept and context of TVET institutions in Nigeria.

CHAPTER FOUR

INTEGRATION OF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) AND ENTREPRENEURSHIP EDUCATION

4.1 INTRODUCTION

TVET is one of the remedies to the increasing rate of unemployment and under-employment which have continuously been responsible for social and economic unrest at both the government and individual levels in Nigeria (Amadi & Johnwest, 2016). TVET is regarded as an economic tool for engaging poverty and unemployment (UNESCO-UNEVOC, 2012). However, the dividends of acquiring technical skills or vocational skills is yet to be realised in Nigeria. There is need to delineate the key ingredients of entrepreneurship skills from technical skills or vocational skills as these are often used interchangeably. Technical skills and vocational skills are essential for self-employment but the effective management of any startup requires some key elements of entrepreneurship skills. This explains the creation of entrepreneurship education courses in Nigeria's TVET institutions. This chapter identifies some empirical studies on the concept and also assess the role of TVET institutions on entrepreneurship education in Nigeria.

4.2 Concept of Technical and Vocational Education and Training (TVET)

The term Technical and Vocational Education (TVE) is an adjoined concept which consists of Technical Education (TE) and Vocational Education (VE). It makes provision for vocational training, skill acquisition and sufficient scientific ability in the Nigerian educational system (Nwosu & Micah, 2017). Many scholars have used different concepts to describe TVET. Such concepts include: technical education, vocational education, vocational and technical education, technical and vocational education and training etc. (Nwosu & Micah, 2017). Due to lack of proper understanding of the importance of Technical and Vocational Education, the society has been led to believe that it is the preserve of those who cannot afford the general academic education (Moustafa, 2010), and students in these institutions are seen as inferior or less privileged (Okolocha, 2012).

From the foregoing, it is imperative to comprehend the concepts of Technical Education and Vocational Education. Technical education is that aspect of education that involves the acquisition and application of scientific knowledge for the improvement of human livelihood (Olanipekun, Brimah & Rabiu, 2015). Individuals here are expected to be intellectuals with

creative thinking and innovative mindset to qualify as professionals. Vocational education on the other hand is described as that aspect of education that equips individuals with the skills to use their heads and hands for the purpose of earning a living (Olanipekun, *et al.,* 2015). Individuals here are often referred to as artisans.

United Nations Educational Scientific and Cultural Organization (UNESCO) (2013) described TVET as all forms and levels of the educational procedure concerning the study of technologies and related sciences and the acquisition of hands-on skills, attitudes, understanding and knowledge relating to profession in various segments of commercial life.

According to Olanipekun *et al,* (2015), technical and vocational education prepare an individual for the world of work in order to become self-reliant, and to be able to add value to the development of the society. This is the essential skills and knowledge to be acquired prior to industrial entry in order to compete with the advanced level of technologies in the industries. In Nigeria, Technical and vocational skills and knowledge are acquired in Vocational Training Institutes, Technical Colleges at Secondary level, College of Education, Polytechnics and Universities at tertiary level (Nwosu & Micah, 2017).

TVET is steadily emerging as a pivotal part of global debate and government policies around the world. In the recent report of UNESCO as compiled by Marope, Chakroun and Holmes (2015), it was acknowledged that TVET remains the source of skills and technology required to drive productivity in the twenty-first century. Many countries of the world have introduced TVET into their education system through various policies considering the numerous opportunities that can be derived from its implementation. A cursory look into the incorporation of TVET in advanced and developing countries becomes necessary.

4.3 TVET in developed and developing countries

The UNESCO-UNEVOC have been on the front burner in the promotion and implementation of skills acquisition projects on TVET in many developed and developing economies. In developed countries like China, Russia, Germany, Korea and United States, TVET has been regarded as education for the less privileged until recently (UNESCO-UNEVOC, 2012). These countries have shown a continuous increase in the rate of enrolment at each level of education, with significant impact in their manufacturing sector particularly in technological domain. There has been some slow improvement in TVET development in developing countries such as India, Malaysia, Mexico, Ethiopia, South Africa, Ghana and Nigeria with regards to increase in the rate of enrolment and changes in public perceptions. TVET in Africa differs from country

to country and are acquired at TVET institutions, polytechnics, apprenticeship, and training centres (African Union, 2007).

Maiga (2013) observed that students' enrolment in TVET courses in Africa is far too low compared to students' enrollment in Europe. Germany had 53.2% enrolment in TVET colleges; Finland had 55.1%, Ireland 33.9%, and South Korea 24.4%. In Africa, Angola had 72.19%, Burkina Faso 20.9%, Cameroun 22.4%, Ethiopia 59.5%, Ghana 13.2%, Kenya 1.0% and South Africa had 9.7% (African Centre for Economic Transformation, 2013). Despite the higher enrolment rate in Angola and Ethiopia than some European countries, the economic and technological advancement in Angola and Ethiopia is far below the technological standard of these European countries (Essel, Agyarkoh, Sumaila & Yankson, 2014). In terms of Global Competitiveness, Angola is ranked 138, and Ethiopia 121 out of 139 countries in the 2010-11 Global Competitiveness Index. In 2009, Finland is ranked 6th, Germany 7th, and South Korea 13th (Africa Centre for Economic Transformation, 2013). This is an indication that competitiveness does not depend on high enrolment rates but quality of TVET system. However, the need for technical and vocational skills is in high demand due to changes in technology and economic competitiveness (Yusuff & Soyemi, 2012). Skills demand is a function of technological changes, and technical and vocational training systems must continue to adjust to these changes.

4.3.1 TVET in Finland

The skills and knowledge required to succeed in the 4th Industrial Revolution have been subjected to debate. Significant reform of TVET in Finland is paving the way to develop skills and competence. It includes extensive curriculum redesign, on-the-job learning, and partnerships between vocational schools, and start-ups and multinational enterprise (Autio, 2016). While the mismatch of skills demand and supply has been of growing concern particularly in developing countries, reforms of the TVET sector in Finland have contributed to reduce youth unemployment. The following reforms were adopted:

- New legislation
- Integration of on-the-job training and advanced training to enhance graduates' ability to adapt to changing technology
- Mandatory pedagogical training and improved qualifications for teachers.
- Industry stakeholders are part of curriculum design and offer mentoring.
- Integrating entrepreneurship education into TVET.

It must be emphasised that unlocking the potential of the TVET students in any country requires effective reforms in the system of education and social perception. These reforms have led to over 50% application for the programmes by the youth in Finland (Gita, 2016).

These reforms also permit TVET students to advance further (in their studies) to the university or applied science with basic funding provision. However, increase in youth unemployment rate still persists in Finland due to its heavy reliance on few large firms in the country. Great emphasis has been placed on integrating entrepreneurship education with the curriculum of the TVET institutions (Gita, 2016).

4.3.2 TVET in Germany

The Germany vocational training system uses a two-pronged approach that includes education and training. The Vocational Training Act provides for 500,000 industry-based training contracts per year (BRICS, 2016). Apprentices divide their time between classroom learning and on-the-job training in a firm spending three to four days a week in an industrial plant acquiring the practical skills required for their field of work (BRICS, 2016). Field of work includes mechatronics engineering, electrical engineering for automation and industrial mechanics. Apprentices obtain an understanding of work habits and assimilate the culture of the specific industry. Apprenticeships last two to three years and apprentices are paid during this period.

German employers noted that this system enables them to develop the skills of a talented pool of students' allowing them to easily transit from the classroom to the work environment (World Economic Forum, 2017). The German government are working towards customisation of vocational qualifications to ensure easier transition from the initial training to continuous vocational training thereby promoting a lifelong learning approach (Descy & Tessaring, 2001).

4.3.3 TVET in China

China's TVET programme has received strong support from UNESCO through the Chinese Education Authority to improve its quality and relevance using innovative approaches. Due to the diverse population of China, institutions with various programmes were created. TVET is provided at junior secondary vocational schools for professional knowledge and specific skills for three to four years. These are mainly located in rural areas to control rural-urban migration. Three types of TVET are provided at senior secondary level, for skilled workers and those in the agricultural and technical fields. These courses usually span three to four years. The focus

of the senior TVET level is production (manufacturing) such as mechanics and technology (Zhenyi & Lamb, 2010). As at 2001, China had about 17,500 vocational schools with specialised skilled workers representing almost 50% of all students (Liping, 2013). This has transformed the country, and China is now the second largest economy in the world (Liping, 2018), and enjoys annual GDP growth of more than 8% (World Bank, 2009). The government of China ensures that the qualification standards for TVET and general education are the same and this has improved public perception of TVET, with more than 50% increase in the number of applicants within 5 years (Ratnata, 2012). TVET in China is geared toward employment-oriented policy (Shi, 2012), and this has developed China's goods manufacturing industry (Ratnata, 2012). It has also accelerated the rate of industrial development in China.

4.3.4 TVET in Switzerland

In Switzerland, vocational training runs for three to four years and combines classroom instruction and apprenticeships. The fact that apprentices are paid motivates participants to register for such training. The Swiss system is based on a public-private partnership between the federal government, and state and the professional institutions that work together to develop the curricula and skills definitions, as well as set standards for the workforce in various occupations across the country (BRICS, 2016). The Swiss confederation (federal government) plays a supervisory role by ensuring quality control and regulation, while the private sector provides vital on-the-job training and thereafter absorbs apprentices, enabling the acquired skills to be molded by the needs of different industries.

4.3.5 TVET in India

India boasts of the largest body of technical person power in the world due to its emphasis on technical vocational education. With an estimated of 12 million people joining the workforce annually, the country is expected to produce 500million skilled workforce by 2022 (Hemant, 2018). However, progress has been hampered by the gap between the curriculum and industry's needs; a shortage of trained teachers, lack of infrastructure and challenges posed by indigenous cultural beliefs, etc. The National Skill Development Council has launched the following initiatives:

- Institution-based skills development programmes to be implemented in professional colleges, polytechnics, technical colleges, vocational schools etc.
- Training for self-employment and entrepreneurial development
- Adult training and retraining of employees and lifelong learning

- Formal and informal apprenticeship
- Web-based learning, e-learning and virtual system etc. (BRICS, 2016).

India has also launched the Employability Enhancement Mission to support the apprenticeship model of training, skills scholarship and low interest loans and skills certificates (BRICS, 2016).

4.3.6 TVET in South Africa

The VET policy in South Africa is focused on productivism with the objectives of training toward economic growth and skills acquisition for job creation (Powell & McGrath, 2013). The South African perception about TVET is not different from the usual belief that TVET is the preserve of the poor or inferior people. However, through the National Skills Development Strategy, South Africa is aligning the TVET policy with the national objectives. TVET in South Africa is funded through the South Africa Treasury, and has developed into an expanded TVET sector (Ngcwangu, 2014). According to the Department of Higher Education and Training (DHET) (2013), the rate of enrolment into TVET institutions rises from 345,566 in 2010 to about 550,000 in 2013. The DHET aims to increase the rate of enrolment to 4 million by the year 2030, but most young South Africans prefer university education which is believed to be the easier route to white collar jobs and careers (Ngcwangu, 2014). Yet, TVET remain the cornerstone for skills formation to develop any economy.

In addition, in the report of Barucci, Zanola and Axmann (2017), as presented by Pilz (2017), Jamaica, Jordan, and Zambia have a well-functioning legal framework at national level for vocational education and technical (VET). However, other developing nations such as Tunisia, Ukraine, Peru, and Vietnam have no coordinating body at national level and lacks standard VET system. The poor implementation of TVET strategies in developing countries including Nigeria explains the state of skills mismatch and low business start-ups among the youth.

4.3.7 TVET in Ghana

The Council for Technical and Vocational Education and Training (COVET) is responsible for the regulation and supervision of all TVET activities in Ghana. The COVET is yet to live up to its responsibility in the development of TVET. Research study shows that the number of TVET institutes available in Ghana is not sufficient compare to the general education. Amedorme and Fiagbe (2013) noted that the number of TVET institutes in Ghana is about 21, which is poorly insufficient to the population. Despite the fact that these institutes lack facilities and equipment to train students in various trade-specific area, graduates of TVET institutes

find it difficult to proceed further from technical institute to acquire Higher National Diploma certificate at the polytechnic. This is as a result of the additional courses or programs required for technical students to pass before being admitted into the polytechnics (Amedorme & Fiagbe, 2013). This situation has continued to hamper the development of TVET in Ghana.

4.3.8 TVET in Nigeria

Before independence in 1960, a shortage of skilled manpower at all levels of the Nigerian workforce particularly the education system was observed by the Ashby Commission. The Commission recommended the introduction of technical subjects in secondary education in order to supply the required number of engineers and technicians for the country (Adamu, 2016). Based on the recommendation, some technical and vocational schools were created but other secondary and higher institutions were oriented toward white-collar jobs. The technical and vocational schools were disregarded due to the wrong perception that it is the preserve of the less privileged (Ismail & Mohammed, 2015). Consequently, there is shortage of highly skilled technical manpower in all sectors of the Nigerian economy. In the light of this, the Nigerian government took a step further to salvage the situation.

Nigeria's National Board for Technical Education and Training (NBTE) was established by Act No 9 of 11 January, 1977 through the approval of the Federal Ministry of Education. It has the responsibility for curricula guidelines, and supervision and regulation through accreditation of programs offered at TVET institutions at all levels and aims to promote quality TVET for national and global growth and development. The aims and objectives of technical and vocational education in Nigeria are to:

a) Produce competent manpower in the practical sciences, technology and entrepreneurship especially in craft and technical level;
b) Supply the technical knowledge and occupational skills required for agriculture,
c) economic development;
d) Produce individuals who can apply scientific knowledge to the development and solution to societal problems for human comfort;
e) Create awareness amongst men and women and inculcate the understanding of the increasing challenges of technology;
f) Offer an introduction to specialised studies in engineering and other technologies (NBTE, 2004).

It is instructive to note that the establishment of these institutions has had little or no effect in entrepreneurial development in Nigeria. In 2006, the UNESCO noted that TVET programmes in Nigeria have not led to increase in employment, despite the high demand for technical and vocational services. This assertion was buttressed in the report of Fagge (2017), that most of the graduates of these institutions are unable to sustain a new business. Similarly, Ugochukwu (2017) asserted that, despite government investment in TVET, and high expectations that TVET graduates will be self-reliant, these institutions are not performing well. Many previous studies have investigated skills development through TVET in Nigeria as depicted below in Table 4.1

Table 4.1: Studies on skills development in TVET institutions in Nigeria

AUTHORS	TITLE	FINDINGS
Okoye and Chijioke (2013)	Private-public partnership and TVET in a developing economy	Funding was identified as one of the major challenges of TVET in Nigeria
Maigida, Jaba and Namkere (2013)	Entrepreneurial skills in technical vocation education and training as a strategic approach for achieving youth empowerment	The authors found that creativity, need to achieve, need for autonomy, intuition among others are the ingredients of good leadership and requirements for effectiveness in any vocational area
Okoye and Okwelle (2013)	TVET in Nigeria and energy Development, marketing and national transformation	The authors found that TVET is a developmental tool for the National Transformational Agenda, and argued for the need to invest in TVET institutions.
Chukwuedo and Omofonmwan (2015)	Developing Industrial and Technological Manpower via TVET in Nigeria	The authors found that TVET policy reform issues and TVET-industry partnership are viable mechanisms for developing industrial and technological manpower for national development via TVET programmes in Nigeria
Idris Adamu (2016)	The Role of Teachers Training Institutions in TVET in Nigeria	The authors revealed that analytical review on Electrical Technology Education programme curriculum showed that the curriculum gave less attention to practice-based courses that provide skills of the programme than theory-based courses and no course in the programme curriculum that directly teaches good attitudes and traits.
Amaechi, Orlu, Obed and Thomas (2017)	Skills required for Improving Local Content Development among Mechanical Engineering Students for Industrialization of Polytechnics in Rivers State	Findings of the study revealed that ability to: Select and use of hand tools, perform basic, routine layout, read and comprehend job process sheets for routine manufacturing operations, perform hand fitting and minor assembly are the strategies for improving TVET and local content development among mechanical technology students
Idris and Mbudai (2017)	Technical and Vocational Education Challenges Towards Youth Empowerment in Kano State Nigeria	The result obtained from the study shows that, the curriculum of Technical and Vocational Education is adequate in terms of content and also covers the skill element needed but it is lacking in terms of implementation towards achieving the desired national goals.

Source: Author's compilation

Despite extensive research studies on TVET institutions in Nigeria, the problem of low business start-up among graduates of the institutions still persists. Due to the low number of

youths with entrepreneurial readiness in most African countries particularly in Nigeria, Marope *et al.,* (2015) recommended that the integration of TVET and entrepreneurship can pave the way for employment creation especially in Sub-Saharan Africa. Besides, Fagge (2017) opined that TVET will supply youth with technological skills in various trades, and entrepreneurship education will provide skills for business start-up. Integrating TVET and entrepreneurship mirrors the importance of entrepreneurship education. Scholarly works have also advanced that special focus should be on the effective implementation of entrepreneurship education at TVET institutions in Nigeria (Fagge, 2017; Olaniran & Mncube, 2018).

In 2004, the Nigerian Government introduced entrepreneurship education into all TVET institutions in the country to foster entrepreneurial skills and technological competence for global competition (Adamu, 2016). Despite this initiative, graduates from these institutions are deficient in entrepreneurial skills with poor business creation and are not ready to compete globally (Audu *et al.,* 2013; Ugochukwu, 2017). Further, Nigeria is ranked in 158 position out of 189 countries in terms of human development domain (Human Development Index, 2018).

Additionally, a considerable number of literatures has identified the deficiency of the entrepreneurship curriculum content at TVET institutions in Nigeria as lacking the appropriate entrepreneurial programmes for venture creation (Vincent, *et al.,* 2013; Maigida, *et al.,* 2013). The content of entrepreneurship curriculum at TVET institutions is deficient of practical translations such as workshops, and seminars. Scholars have also lamented on the challenge of effective curriculum implementation at primary, secondary, and tertiary level (Ladipo, Akhuemonkhan & Raimi, 2013). Ivowi, (2004) asserted that the importance of curriculum implementation is essential because it is the pragmatic translation of theory into practice, or proposal into action within the formal setting of a school. But effective implementation of curriculum content in Nigeria is hampered by deficient and obsolete vocational learning tools (Ladipo, *et al,* 2013).

Oviawe and Ekhovbiye (2008) noted that non-inclusion of entrepreneurship programs in the curricula, and poor societal perception towards TVET development are some of the hindrances of entrepreneurship education in Nigeria. The entrepreneurship curricular content in most TVET institutions in Nigeria is deficient of workshop trainings and practical engagements. The table below shows the entrepreneurship curriculum content of Lagos State Technical Vocational Education and Training.

Table 4. 2 Scheme of Work for Entrepreneurship Studies

TECH 1	
TOPICS	APPLICATION
Mind building	Theory
Entrepreneurship concept	Theory
Business and small-scale business	Theory
Business opportunities	Theory
Classification of enterprise into business	Theory
Profit making organisations	Theory
Partnership	Theory
Limited liability companies	Theory
Zero to something	Practical
Young entrepreneur's day	Exhibition
Cooperative societies	Theory
Identification of challenges involved in setting up a business	Theory
Entrepreneurship leadership role	Theory
Major competencies required for successful entrepreneurs	Theory
Decision making process	Theory
Risk management	Theory
Setting up of a business	Theory
Business financing	Theory
Young entrepreneur's day	seminar
Key success factors in setting up a small business	Theory
Communication	Theory
Feasibility study	Theory
Business plan	Theory
Zero to something	Practical
TECH 2	
Banking	Theory
Business documents	Theory
Financial record & types	Theory
Cash book	Theory
Petty cash book	Theory
Zero to something	Practical
Double column cash book	Theory
Trading, profit and loss account	Theory
Balance sheet	Theory
Business plan	Theory
Elements of contract	Theory
Zero to something	practical
TECH 3	Theory
Organisational chart	Theory
Personnel management	Theory
Conflict resolution	Theory
Marketing	Theory
Modern trends in business	Theory
Zero to something	Practical
Store keeping	Theory
Business environment	Theory
Principles of costing	Theory
Mentorship programme	Theory
Safety rules and regulations	Theory

Source: Lagos State Technical & Vocational Education Board (LASTVEB) (2017)

Table 4.2 above reveals that over 90% of the course content are taught theoretically. This affirmed the assertions by Ladipo *et al.* (2013), and Onweh *et al.* (2013) that the curriculum content of TVET institutions in Nigeria is deficient of practical translations. Thus, the students lack the key entrepreneurial skills such as risk-taking ability, innovativeness, and managerial skills to venture and sustain a business. Oviawe (2010) noted that properly planned entrepreneurship programmes will ensure self-employment and increase job creation amongst the youth.

Furthermore, Anele *et al*. (2014) examined 61 TVET administrators, and 96 entrepreneurs in Small and Medium Enterprises. The authors concluded that effective implementation of entrepreneurship education in TVET programmes will avail TVET students the necessary entrepreneurial skill for self-employment. Buli and Yesuf (2015) mentioned that entrepreneurship course content at TVET institutions should address decision making, effective communication, entrepreneurial negotiation, leadership, effective and efficient use of resources, new product development, creativity and critical thinking. There is therefore need to reform entrepreneurship education of TVET institutions to avail the Nigerian youth the opportunity to acquire entrepreneurial skills to become job creators and self-reliant.

Table 4. 3: List of approved curricular in Lagos State technical colleges as at September 2016.

/N	SECTOR	OCCUPATION	NSQ LEVELS	YEAR LAST REVIEWED
1	Building construction	Plumbing	1,2 & 3	2007
2		Masonry	1,2 & 3	2009
3		Painting and Decoration	1,2 & 3	2009
4		Tiling	1,2 & 3	2007
5		Electrical Installation	1,2 & 3	2007
6		Carpentry and Joinery	1,2 & 3	2009
7		Welding and Fabrication,	1,2 & 3	2007
8	Engineering	Automobile Mechanic,	1,2 & 3	2009
9	Hospitality, Leisure and Tourism	Hospitality and Catering	1,2 & 3	2007
10		Travelling and Tourism	1,2 & 3	2009
11	Power/Engineering	Power System Protection,		Not validated yet
12	,,	Turbine Maintenance,		Not validated yet
13	,,	Mechanical Auxiliaries' maintenance,		Not validated yet
14	,,	System Electrical Operation,		Not validated yet
15	,,	Electrical Maintenance,		2007
16	Engineering	Computer Hardware Maintenance and Repairs	1 & 2	2007
17	,,	GSM Repairs	1 & 2	2007
18	,,	Satellite Installation and Maintenance	1 & 2	2007
19	,,	Refrigeration and Air-conditioning Repairs and Maintenance	1 & 2	2007
20	,,	Tri-cycle Assembly and Maintenance	1 & 2	Not validated yet
21	,,	Motor Cycle Repairs and Maintenance	1 & 2	Not validated yet
22	Servicing	Office Technology	1 & 2	
23		Leather works	1 & 2	2007
24		Furniture Making	1 & 2	2009
25		Garment Making	1 & 2	2007
26	Agro-Processing	Rice milling	1 & 2	
27	General Education Subjects	English Language		2010
		Biology		2010
		Chemistry		2010
		Entrepreneurship Education		2010
		ICT		2010
		Mathematics		2010
		Economics		2010
		Technical Drawing		2010

Source: National Board for Technical Education (2016)

Table 4.3 above shows the list of approved curricular in Lagos State technical colleges as at September 2016. From the table above, it can be inferred that entrepreneurship education is taught as a general subject for all technical students (from Tech 1 to Tech 3). However, the last time the subject was reviewed was in 2010 before the development of IEO by Bolton and Lane in 2012. The entrepreneurial characteristics of risk-taking, innovativeness, and proactiveness which are propensities of IEO concept have not been fully harnessed in entrepreneurship education (Ferreira *et al.*, 2012) in Nigeria. Koe (2016) emphasised the fact that entrepreneurship education should lay emphasis on students' IEO ability in order to increase their entrepreneurial intention. Based on this discussion, this study aims to examine individual entrepreneurial orientation (IEO) as determinants of entrepreneurial readiness at selected

TVET institutions in Nigeria. Pilz (2017) had earlier maintained that the lack of research attitude particularly in public TVET institutions contributes to the negative impact of implementing TVET programmes.

4.4 Nigerian government interventions in TVET institutions and education

Globally, TVET is regarded as an economic tool for battling poverty and unemployment (UNESCO-UNEVOC, 2012). Okurumeh, (2014) posited that acquisition of vocational skills allows individuals to become gainfully employed, and this can be achieved through vocational education. Nwosu and Micah, (2017) opined that TVET is a genuine tool for global development. This supports the position of Okwelle and Deebom, (2017), that technical and vocational education is widely recognised for its practical-oriented components and as a key ingredient for any nation to become technologically relevant and globally competitive. However, the TVET institutions in Nigeria are not producing graduates with competent skills to become self-employed (Ismail & Mohammed, 2015). The continuous high unemployment rate and poor state of business among the graduates from TVET institutions is of serious concern. Faggie (2017) noted that most of the graduates from TVET institutions are not able to start a business, due to poor entrepreneurial orientation (Ibrahim & Lucky, 2014). However, the Nigerian government has tried in many ways in implementing certain policies to ameliorate these problems.

In the mid-80s, the Nigeria government allocated ₦400.2 million to boost technical and vocational education in Nigeria ((Amadi & Johnwest, 2016). Through the Educational Trust Fund (ETF), the Federal Government of Nigeria structured a three-year action plan to revamp the technical and vocational education by allocating five billion naira (₦5b) annually for the year 2005, 2006, and 2007 respectively (Amadi & Johnwest, 2016). Furthermore, the Nigeria government spends huge amount of her budget on importation of tractors, drilling machines, industrial equipment, and ICT equipment from America, India, and Europe to equip the TVET Institutions (Innocent, Lukman & Dada, 2014). The sum of $7.592 billion or N1.2 trillion in 2013 was expended on TVET Institutions (Innocent *et al.*, 2014) with the hope that graduates from these institutions will be entrepreneurially competent. But all to no benefit. It is pathetic to know that in 2013, Nigeria still expends 50 percent of her budgeted expenditure for education, on TVET institutions in that fiscal year (Amuta, 2013). It is instructive to note that some of this equipment are produce of students in TVET institutions from developed countries such as China, United States, Germany etc.

There is no doubt that TVET is capital intensive. Both government and private organisations need to invest hugely to acquire modern machines and training facilities (Maigida, *et al.*, 2013) as most of the present equipment and laboratory tools are obsolete and do not match international standard (Okwelle & Deebom, 2017). Yet, TVET is an economic sustainable tool that provides creativity skill and hands-on learning experience to learners for self-sufficiency and self-reliant (Ladipo *et al*, 2013). Akhuemonkhan *et al.*, (2014) established that Nigeria can attain technological progress and industrialisation if TVET is vigorously harnessed and encouraged, thereby becoming a producing nation rather than an importing nation.

The table below shows the federal government budget allocation on education between the years 2010 to 2018.

Table 4. 4: Nigeria government annual budget on education from 2010-2018

YEAR	2010	2011	2012	2013	2014	2015	2016	2017	2018
AMT	249.08bn	306.3bn	400.15bn	426.53bn	493bn	492.03bn	369.6bn	550bn	605.08bn
%	7.19%	9.32%	9.86%	10.15%	10.54%	10.78%	6.01%	6%	7.04%

Source: Anero, 2018.

Table 4.4 reveals the continuous unserious attitude of government towards the business of education in Nigeria. From the year 2012 to 2015 shows higher percentage than 2016 even though the previous year's budget allocations fell below the UNESCO benchmark of 26% budget to education. Furthermore, the budgeted percentages for the year 2018 is lower than that of 2010 despite the continuous increase in youth population. Expenditure only increase in figures but not in terms of annual percentage (Anero, 2018). This show of unwillingness by the government will continue to hamper the growth of quality education in Nigeria. This poor annual budget on education explains the problems of dilapidated classrooms, obsolete laboratory equipment, lack of practical programmes, and insufficient fund that characterised TVET institutions in Nigeria (Vincent *et al.*, 2013; Ladipo *et al.*, 2013; Olajide, 2015; Adamu, 2016).

Table 4.5 below provided additional insight into the Nigerian government expenditure on education in comparison with other African counterparts**.**

Table 4. 5: A Five-Year comparative analysis of expenditure on education as a percentage of total government expenditure (%) of five African countries is presented below:

COUNTRIES	2014	2015	2016	2017	2018
GHANA	20.99%	23.81%	22.09%	20.10%	-
BURUNDI	19.69%	24.22%	20.91%	20.40%	-
SOUTH AFRICA	19.13%	17.01%	17.07%	17.04%	17.01%
KENYA	17.08%	16.66%	17.34%	17.58%	-
NIGERIA	10.54%	10.78%	7.92%	7.40%	7.04%

Source: UIS.STAT (2019)

It is evident from the above data that the allocated budget for education by the Nigerian government continue to experience a decline from 2014 to 2018. Table 4.5 showed a sharp decline from 10.78% in 2015 to 7.92% in 2016, making it the worst drop in variance in a decade. It further dropped to 7.40% in 2017, and 7.04% in 2018. Ghana and Burundi were at the forefront of matching the UNESCO benchmark of 26%, yet, there exist a decline from 23.81% in 2015 to 22.09% in 2016, and 24.22% in 2015 to 20.40% in 2017 in the two countries respectively. This poor investment and show of neglect of the education sector in Nigeria justifies the low quality of education and skills mismatch amongst the youth. Besides, a crucial attention on entrepreneurship education and TVET through investment is of utmost importance to bridge the gap between skills demand and supply particularly in this era of digital revolution.

4.5 Integration of entrepreneurship education and TVET

The International Labour Organisation, while addressing the global job situation implores its members to establish youth-engaging vocations such as; automobile mechanic, metal fabrication, electrical electronics, wood work, fabric design among others (IncuVET, 2015). The EU also co-funded a project called IncuVET to aid the innovative role of TVET institutions as local entrepreneurship hub beyond the provision of venture creation (IncuVET, 2015). This initiative allows teachers and students to come together and discuss how entrepreneurship education is incorporated in the curriculum. These narratives suggest that entrepreneurship skills through TVET can ensure a match between skills demand and supply amongst the youths (Maigida *et al.*, 2013). Entrepreneurship and technology play a vital role in innovation and productivity growth (Elmuti *et al.*, 2012).

In the UNESCO-UNEVOC (2013) experts' meeting held in Beirut on the development of TVET institutions and entrepreneurship in the Arab States as presented by Suleiman (2013), experts from Egypt, Iraq, Lebanon, Sudan, Libya, Syria, Tunisia, United Arab Emirates, Yemen, Germany, the Republic of Korea, United Kingdom and Nigeria emphasised the essential need to integrate entrepreneurship education and ICT in TVET. Research works have advanced that entrepreneurship education and technical and vocational education can significantly influence individuals' knowledge and skills. Ne and Ye (2018) conducted a survey on 730 secondary vocational students in China, and found that vocational students showed higher rate of participation in entrepreneurship education than their counterpart in academic schools. In Brazil, Stadler and Smith (2017) investigated students from technical and vocational schools and found that teaching of entrepreneurship was responsible for making a difference in more than 90% of students' personal, professional and academic life. The study conducted in India by Wibowo, Saptono and Suparno, (2018) indicated that entrepreneurship education directly impacts entrepreneurial intention of 743 students from public vocational secondary school.

Furthermore, Asykin, Rasul and Othman (2019) reported that entrepreneurial exposure particularly to TVET students from Malaysia will launch them into venture creation as technical entrepreneurs in line with requirements of the 4th Industrial Revolution. Purwana and Suhud (2017) examined 628 vocational students from Indonesia and found that entrepreneurship education motivates students towards entrepreneurial activities. Additionally, Guzman and Choi (2013) found a positive correlation between career adaptability and employability skills amongst technical students in Papua New Guinea.

In the same vein, Kikechi, Owano, Ayodo and Ejakait (2013) conducted a study in Kenya on 186 teachers and 393 graduates of secondary school students offering technical subjects for the year 2009, 2010 and 2011. The study affirmed that there is a link between entrepreneurship skills acquired from technical subjects and increase in business startups by students upon graduation. Badawi (2013) also observed that one of the tools that can combat unemployment is the combination of entrepreneurship skills and occupation-specific skills thereby opening opportunities for self-employment. The study identifies a positive relationship between entrepreneurship education and TVET. Buli and Yesuf (2015) demonstrated that entrepreneurship education at a selected TVET institution in Ethiopia motivates students' personal attitude towards behaviour and perceived behavioural control towards entrepreneurial intention. In an attempt to justify the importance of entrepreneurship education in TVET

institutions, Shikalepo (2019) found that the absence of entrepreneurship education in Namibia vocational institutions makes it difficult for graduates to turn their vocational skills and newly developed concepts (innovations) into business opportunities (entrepreneurship).

The positive impact of TVET entrepreneurship education towards venture creation was also demonstrated by Lwal (2019) among deaf TVET students from Nairobi. The study indicated that 56% of the students immediately created start-ups upon graduation, while 44% who also acquired technical and vocational skills claimed that the skills were not sufficient enough to help them start a business. On the contrary, the study conducted by Galvão, Marques and Marques (2017) among students in vocational training programs in Portugal, it was observed that exposure to entrepreneurship education does not influence individual entrepreneurial intention. This inconsistency justifies the need to further investigate the entrepreneurship content and pedagogical strategies adopted in delivering entrepreneurship education at technical vocational institutions.

4.6 Entrepreneurship pedagogy

Entrepreneurship pedagogy is the practical technique employed to transfer knowledge of value creation through creativity and innovation (Hamidi, Wennberg & Berglund, 2008). Middleton and Donnellon (2014) described entrepreneurship pedagogy as the methods of developing 'the what, the how, and the why' of entrepreneurship. Marques and Albuquerque (2012) defined it as an approach used by teachers to improve and develop character, attitudes that will be of daily and future benefits. Further, entrepreneurship pedagogy can be described as the strategic techniques that can stimulate learning and understanding of entrepreneurial activities through practical applications.

Extant literatures exist on the fact that entrepreneurship is teachable (Fayolle, 2018; Sanchez, 2013). This lays the foundation for the recognition of entrepreneurship education. But the complexity of entrepreneurship education on 'what to teach', 'how to teach' and 'why the teaching' has been a longstanding debate globally (Fayolle, 2013; Marques *et al.*, 2012) particularly in Nigeria. Entrepreneurship pedagogy in Nigeria has been criticised for lacking practical approach (Oviawe, 2010; Adamu, 2016), which is a reflection of poor business start-ups among the youth in Nigeria. In similar vein, Ladipo, Akhuemonkhan and Raimi (2013) noted that the teaching methods adopted by vocational teachers in Nigeria is more of theory than practice, and this may be due to lack of practical materials or tools or theoretical nature of

the entrepreneurship curriculum content (Vincent *et al.*, 2013). The entrepreneurship curriculum content at TVET institutions in Nigeria is deficient of practical translations such as workshops, and seminars (Lame & Yusoff, 2013; Ladipo *et al*, 2013), and the students are at the receiving end. This calls for a need to revisit the entrepreneurship curriculum of these institutions.

The teaching method or strategies adopted by vocational teachers for the implementation of the curriculum content is also of serious concern. A research conducted by Kipoech and Chesire (2011) revealed that pedagogical decisions amongst secondary school teachers are very low. Blom (2016) affirmed that TVET teaching method involves hands-on practical, experiential learning, and application of theoretical strategies (Lucas, Spencer & Claxton, 2012). But there are many challenges facing the delivery of pedagogical strategies especially in Nigeria. Extant literatures reveal that shortage of skilled teachers (Amedorme & Fiagbe, 2013), under-researched pedagogical approach (Lucas, 2014), curriculum design (Vincent *et al.*, 2013) are the major challenges hindering effective pedagogical strategies in in Nigeria TVET institutions.

4.7 Vocational pedagogy and vocational education

Vocational pedagogy, according to Lucas *et al.* (2012) is the science, art and craft of teaching and learning vocational education. It is the sum total of strategies employed by vocational teachers to teach and meet the needs of learners (Lucas, 2014). Vocational pedagogy influence researchers to design methods and tools that can assist vocational education teachers to effectively combine teaching and learning techniques to meet the needs of their students in their context (Lucas, 2014). It involves the different decisions vocational teachers take in teaching and learning approach towards students' achievements (Jailani, Siti, Faizal, Maizam, Syahril Marina, Lee, Tee, Sumarwati, Irfan, & Junita, 2017). There have been various debates about what should be the appropriate pedagogical approach in vocational education (Grubb, 2006; Sturing, Biemans, Mulder & Bruijn, 2011; Tran & Tyner, 2013; Wheelahan, 2015).

Different studies have identified some models suitable for teaching and learning strategies in vocational education. For instance, work-based learning model by Burke, Maran, Ooms, Webb and Cooper, (2009), the three aspects of vocational education model: physical materials, people, and symbols framework by Lucas *et al.* (2012), competency-based model by Avis (2014), Erfahrraum multi-dimensional model by Schwendimann, Cattaneo, Zufferey, Gurtner, Betrancourt, and Dillenbourg (2015), gaming simulation model by Fominykh, Uskova,

Mantulenko, Kuzmina, and Shuravina (2016), pedagogical competence model by Diep and Hartmann, (2016) etc. Despite these various pedagogical methods for teaching and learning, vocational pedagogy remains under-researched and under-theorised, hence, the inability to find a common ground (Lucas, 2014). In a bid to address the issue of continuous increase in youth unemployment especially in developing countries, vocational pedagogy should be molded to allow creative and innovative people to be able to employ themselves (Lasonen, 1999). There is need to develop an effective pedagogy that will build and prepare the students for relevant workplace through the acquisition of entrepreneurship skills (Moses, Akinbode, Olokundun, & Agboola, 2015).

Badawi (2013) suggested that such pedagogy should include a combination of entrepreneurship programs and occupation-specific skills that can enhance business opportunities and self-employment thereby reducing unemployment. An empirical study conducted in Malaysia by Sulaiman and Ambotang (2017) on Transformation of Vocational Education and Vocational Skill, and students' Employability showed that entrepreneurship skills has significant impact on students' employability. The transformation of vocational pedagogy through vocational education was launched by the Malaysian government which has proven to be positive. But the missing link has been the non-inclusion of entrepreneurship education in the vocational scheme (Ashmore, 1990). It is not enough to acquire vocational skills for self-employment, but the acquisition of entrepreneurship skills for ownership of small business, and become successful entrepreneurs is essential.

Entrepreneurship education remains the vehicle for vocational education (Ashmore, 1990). Research findings by Shen and Chai (2006) on 760 students at three universities and four polytechnics in Singapore revealed that the introduction of entrepreneurship education into the curricular of universities and polytechnics successfully changed the students' interests and perceptions about entrepreneurship. Wang and Verzat (2011) also found a positive association between management and entrepreneurship curriculum, and engineering students' entrepreneurial determination to become successful entrepreneurs. In their empirical research on 289 final year students at TVET institutions, Ibrahim and Baka (2015) found that exposure to entrepreneurship education increases the students' entrepreneurial intention. Many countries have taken the bold step by reviewing the vocational and technical training skills programs, and integrated entrepreneurship education into the TVET curricular (Haftendorn & Salzano, 2004). The figure below depicts a framework for vocational pedagogy with the integration of entrepreneurship education.

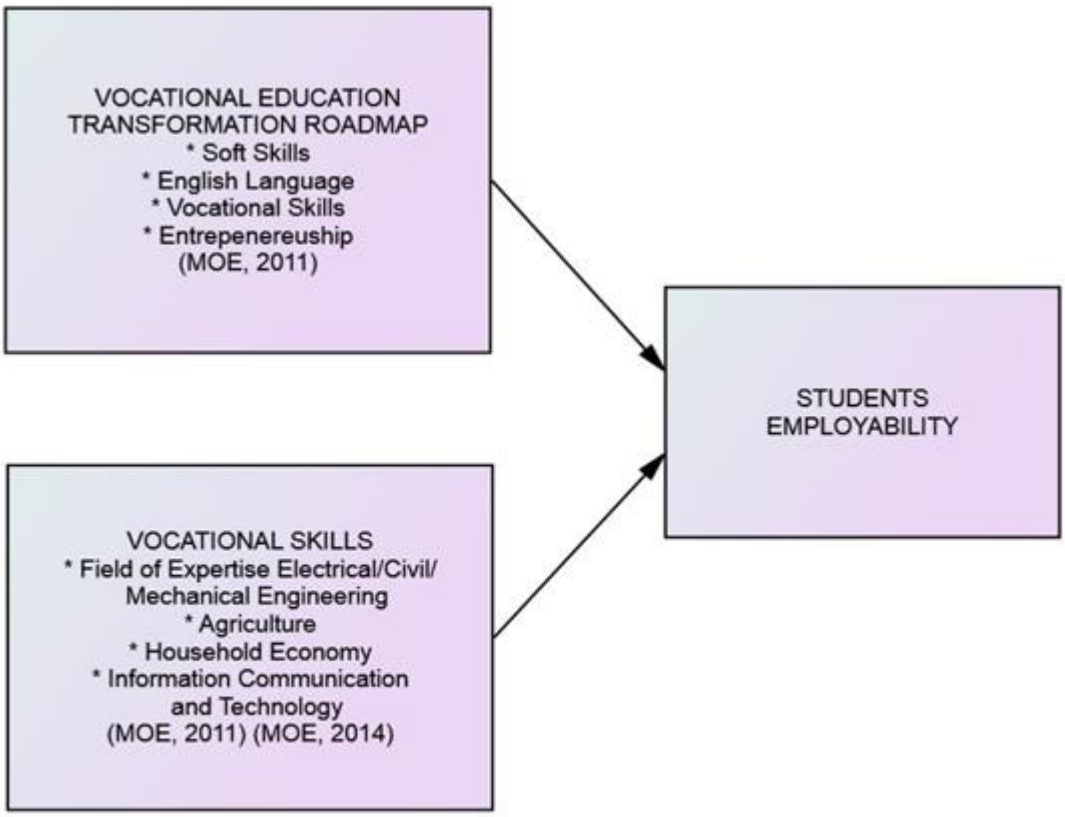

Figure 4. 1 Framework of vocational pedagogy
Source: Sulaiman and Ambotang (2017)

4.8 Vocational pedagogy in Nigeria

Pahl (2014) posited that vocational pedagogy could be seen as science-specific education that focuses on societal issue, vocational education policy, vocation, and education that does not clearly address each specific occupation. This explains the complexity of pedagogical strategies in vocational education, considering the rapid transformation of teaching methods from traditional theory-based techniques to modern practical emphasis (Abraham and Leigha, 2012). This assertion is supported by the views of Mohamad, Heong, Kiong and Rajuddin (2012), that learning methods and teaching methods in vocational education and training (VET) differ from traditional VET.

The complexity of vocational pedagogy remains a global problem (Lucas, 2014), including in Nigeria. Teacher's pedagogy does not seem to have improved Nigerian youth beyond paper certification (Anyanwu, 2008). The reason could be traced to the educational system inherited from the colonial masters which is void of practical applications. Obanya (2006) revealed that mathematics, and technical and vocational subjects are majorly taught via poor pedagogical strategies. In the same vein, Kiadese (2010) lamented that poor infrastructural facilities, lack

of qualified teachers, and poorly equipped workshop and laboratories affect prevocational subjects in Nigeria, but the teacher's factor has been at the heart of many factors affecting student learning. Abraham and Leigha (2012) contended that teachers' quality can no longer guarantee quality education, and as such, vocational education teachers must acquire vocational skills, principles, practices, and pedagogy for vocational aims delivery. Furthermore, Collins (1989) argued that quality curriculum content with effective translation by vocational-inclined teachers can guarantee vocational literacy.

4.9 Chapter summary

This chapter discussed the concept of TVET and entrepreneurship education. It examined the integration of entrepreneurship and TVET for economic and individual development. An overview of TVET in developed and developing countries was explained, and the Nigerian government interventions in education, as well as the need for TVET entrepreneurship was brought to bear. Pedagogical issues in entrepreneurship and TVET were also examined.

The next chapter presents the research methodology of the research study.

CHAPTER FIVE

RESEARCH METHODOLOGY

5.1 INTRODUCTION

The composition in this chapter aims at addressing the alignment of the adopted methodology used in the achievement of the research objectives of the study. A scientific approach is conducted to understand the appropriate philosophical worldview that underpin the research strategy and methods in order to provide responses to the research questions, and test the research hypotheses and achieve the research objectives. The discussion of the research philosophies, research approach, and research strategies helps to harness the most appropriate assumptions or philosophical position in relation to the phenomenon being understudied. To achieve this, it becomes necessary to explore the research onion that was developed by Saunders, Lewis and Thornhill (2009; 2016), by peeling from the outer layer to the inner layer (Sahay, 2016).

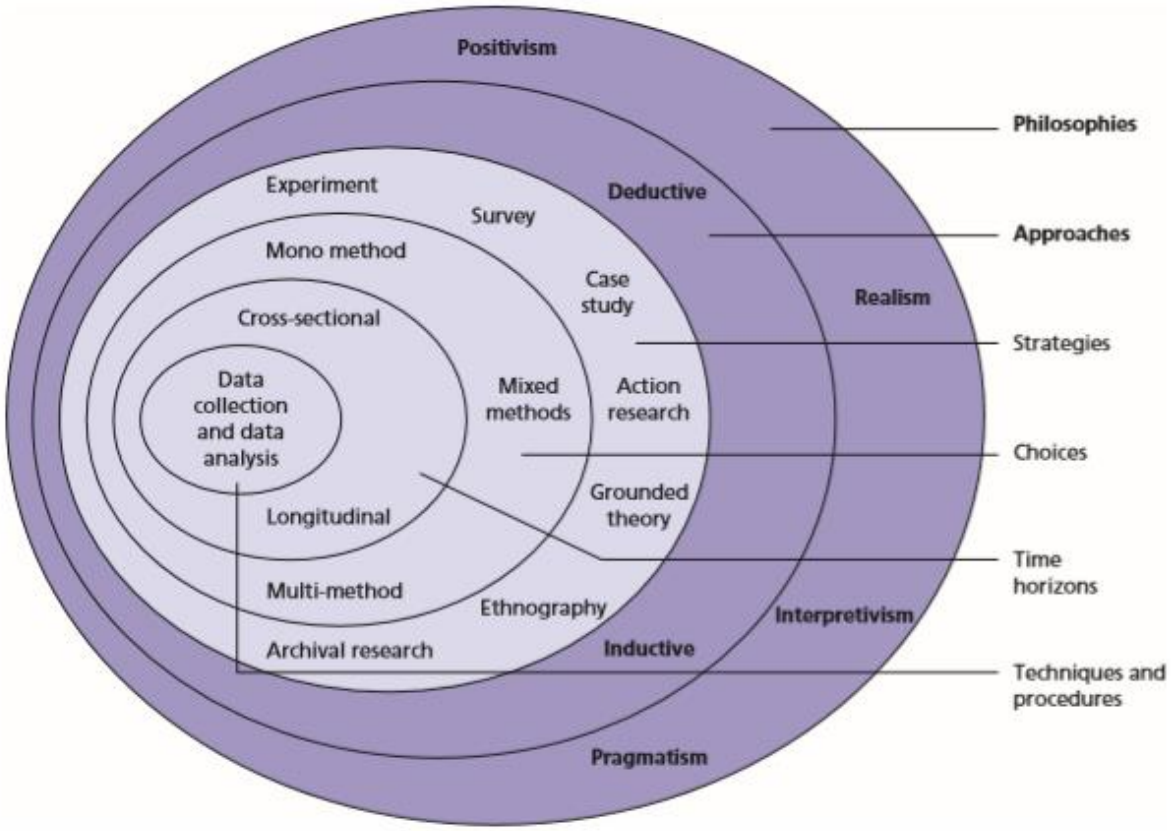

Figure 5. 1 Research onion

Source: Saunders *et al.* (2009, p. 108)

5.2 Research philosophies

Research philosophy refers to the construction of knowledge and the nature of such knowledge (Saunders *et al.,* 2009). In an attempt to develop a knowledge in a specific discipline informs the type of worldview or philosophy that is adopted for an investigation (Saunders *et al.*, 2016). Research philosophy contains some fundamental assumptions in relation to the beliefs of a researcher. However, it is imperative to be aware of the philosophical commitment of the choice of the adopted research strategy for it has significant impact on the knowledge of our investigation (Johnson & Clark, 2006). Thus, the ability to reflect upon the choice of philosophy and defend its applicability to the study is of utmost importance (Johnson & Clark, 2006). As a result, Ponterotto (2010) conceived that paradigm perspective is developed from key philosophical assumptions, including epistemology (relationship between researcher and participant in the quest for knowledge), ontology (nature of reality) which includes objectivism and subjectivism perspectives (Saunders *et al.*, 2010), and axiology (role of values in research) (Guba & Lincoln, 1994). The four main research philosophies are: positivism, interpretivism (Saunders *et al.,* 2009), realism, and pragmatism (Muijs, 2010). The table below depicts the philosophical positions of the major research assumptions.

Table 5. 1 Philosophical paradigms

	Positivism	Realism	Interpretivism	Pragmatism
Epistemology: views on what constitute acceptable knowledge	Only observable phenomena can provide credible data, facts. Focus on causality and law like generalisations, reducing phenomena to simplest elements	Observable phenomena provide credible data, facts. Insufficient data means inaccuracies in sensations (direct realism). Alternatively, phenomena create sensations which are open to misinterpretation (critical realism). Focus on explaining within a context or contexts.	Subjective meanings and social phenomena. Focus upon the details of situation, a reality behind these details, subjective meanings motivating actions.	Either or both observable phenomena and subjective meanings can provide acceptable knowledge dependent upon the research question. Focus on practical applied research, integrating different perspectives to help interpret the data.
Ontology: views of the nature of reality	External, objective and independent of social actors	Its objectives exist independently of human thoughts and beliefs or knowledge of their existence (realist), but is interpreted through social conditioning (critical realist)	Socially constructed, subjective, may change, multiple	External, multiple, view chosen to best enable answering of research question
Axiology: views on the role of values in research	Research is undertaken in a value-free way, the researcher is independent of the data and maintains an objective stance	Research is value laden; the researcher is biased by worldviews, cultural experiences and upbringing. These will impact on the research	Research is value bound, the researcher is part of what is being researched, cannot be separated and so will be subjective	Values play a large role in interpreting results, the researcher adopting both objective and subjective underlying assumptions
Data collection strategies	Highly structured, large samples measurement, quantitative, but can use qualitative	Methods chosen must fit the subject matter, quantitative or qualitative	Small samples, in-depth investigations, qualitative	Mixed or multiple method designs, quantitative and qualitative

Source: Saunders *et al.* (2009, p. 119)

5.2.1 Positivism

The position of the positivism research paradigm assumes that the formation of knowledge is subjected to the fixed law of cause and effect where scientific principles are used to test theories and understand the truth about how the world works (Muijs, 2010). Positivists believe in the use of deductive reasoning to postulate theories by means of predetermined research design and objective measures for the reliability of observation and generalisability of findings (Sekaran & Bougie, 2014). From this viewpoint, the epistemology of the philosophical position of the positivists assumes that true reality of knowledge exists and can be measured objectively through a reliable instrument (Muijs, 2010). It holds the view that the objects being studied have a separate existence from that of the researcher (Saunders *et al.*, 2009), which affirms the

objectivism of the research underlying assumptions. The positivists uncover the truth and interpret it through empirical means, which constitutes acceptable knowledge. The ontological perspective views that external stance exists between the natural phenomena and the researcher (Bryman, 2016). In the perception of Guba and Lincoln (1994), axiological perspective of the positivist suggests that the researcher is independent of the data and objective position is valued.

Positivism research philosophy suggests that the operation of the true reality is processed via a scientific method which is determined by law of cause and effect (Sekaran & Bougie, 2016). Social scientists adopt methods similar to that of the natural sciences as research tools to understand the society (Bell, 2017). However, the perception of the positivists seems to narrow the scope of research efficacies by alluding to the fact that phenomena such as emotions, feelings and thought cannot be directly or objectively measured (Creswell, 2011).

5.2.2 Realism

The underlying assumption of realism is related to scientific enquiry. The realism worldview suggests that reality is independent of the human mind and development of knowledge is through the process of scientific approach (Saunders *et al.,* 2009). Realist views that the truth is out there and the researcher needs to uncover the truth using objective research method which is majorly from natural science (Muij, 2010). Realism considers two contrast positions namely: direct realism and critical realism. Direct realism claims that our perception or experience influences what we see and measure, but there is a limit to subjectivity. Direct realist believes that 'what you see is what you get' as there exists a distinction between the external world and the social actors. Critical realism posits that our perception are illusion or images of the things in the real world as oppose to the view of direct realist that the illusions are mere lack of information of the real world (Saunders *et al.,* 2009). Social researchers seem to align with the assumption of the critical realists by arguing that researchers can identify abstracts through practical and theoretical methods of social sciences (Bhaskar, 1989). This is consistent with the conception of Saunders *et al.,* (2009), that critical realism is much more related to the process of business and management research in that it supports continuous change of the social world, as a result seek to understand the reason for phenomena as a precursor to suggesting solution. Due to the perceived bias of this philosophy, it negates the possible adoption for this study.

5.2.3 Interpretivism

Interpretivist researchers conceive that reality is influenced by individuals' subjective experiences of the external world, which includes human construct (Mutch, 2005). Walsham (1993), and Saunders *et al.* (2016) noted that a major assumption of interpretivism suggests that there are no 'right' or 'wrong' theories; rather, the interest of the researcher as well as the participants involved should dictate the research approach or method. The epistemology of interpretivism assumptions denote that reality is not out there to be objectively observed in contrast to the positivists, but is constructed by human reasoning. Therefore, interpretivists paradigm is underpinned by interpretation and observation through collection of information of events and making inferences between the gathered information and the phenomena (Brymah, 2015). The ontological perspective of interpretivism philosophy referred that personal contact through inductive reasoning and observation of participants to gain in-depth information are strong emphasis to better understand the nature of reality (Ulin, Robinson & Tolley, 2004). Thus, the relationship between the researcher and the phenomena being studied is subjective (Muij, 2010).

Creswell (2014) argued that qualitative researchers rely on historical, cultural norms, and specific context of the participants to shape their interpretations. Interpretivists often generate theories, from general to specific (Bell, 2017). Crotty (1998) identified some underlying assumptions of the constructivism also regarded as interpretivism:

1. Meanings are developed by human reasoning as it interacts with the phenomenon they are interpreting. Qualitative scholars tend to use unstructured questions to gather in-depth information from the participants
2. Humans engage with the external world and make sense of it based on their historical and social background. Thus, qualitative researchers seek to understand the context or setting of the participants through close interaction to gather information personally. Researchers interpretation is also informed by personal experiences and background.
3. The basic generation of meaning is usually through the process of social construction and interaction with the human environment. The process of qualitative research is largely inductive, and information is generated from the fields.

Both the positivists and interpretivists believe that human behavior may be patterned and consistent. Positivists allude this fact to the law of cause and effect while interpretivists hold

that such behavior or changes is generated through social interaction with the external world (Neuman, 2003; Antwi & Hamza, 2015). This approach provides the researcher opportunity to gain in-depth information from the participants on entrepreneurship education propensity and entrepreneurial readiness of exit level students at selected TVET institutions in Nigeria. However, a major criticism of this approach is its subjectivity which allows for bias in shaping reality. Therefore, the combination of positivist (quantitative) and interpretivist (qualitative) approaches were considered appropriate for the investigation of the nature of entrepreneurship education, entrepreneurial self-efficacy, individual entrepreneurial orientation and entrepreneurial readiness of exit level students at the selected TVET institutions. This mixed method approach will allow the findings of this study to be generalisable to a large population, and also help to propose a conceptual framework of entrepreneurship education for TVET institutions in Nigeria.

5.2.4 Pragmatism

The pragmatism worldview could be traced to the work of Peirce, James, Mead and Dewey (Creswell, 2014, p. 27). The pragmatism paradigm holds the views that there is no absolute truth rather the truth is constantly transforming and changing through human problem-solving process (Muij, 2010). The pragmatists beliefs in the applicability or what works for a problem to be solved. The pragmatic philosophers are concerned with the use of all forms of approaches available to understand the truth. It is regarded as a mixed method studies as it focuses on the research problem and using pluralistic approaches to extract knowledge from the problem (Creswell, 2014). Furthermore, pragmatist emphasises the interaction between theory and practice (Sekaran & Bougie, 2009). It views theory as being generated from practice and applied back to practice to derive intelligent practice. Pragmatism values practical application and uses theory to explain practice (Sekaran & Bougie, 2014).

Pragmatism approach helps to reduce bias in understanding the truth by adopting multiple approaches for data collection and interpretation to achieve research objectives. This study adopted the pragmatist approach being the most appropriate philosophical paradigm for mixed methods studies (Tashakkori & Teddlie, 2010; Johnson & Gray, 2010), and mixed methods research remains the preferred alternative to quantitative and qualitative methods (Johnson & Onwuegbuzie, 2004). The adoption of pragmatism is justified below:

5.2.5 Rational for research philosophy underpinning the study

The aim of this study is to identify psychosocial determinants of entrepreneurial readiness at selected TVET institutions in Lagos Metropolis, Nigeria. Extant literatures on entrepreneurship education have adopted various research approaches in understanding the reality of entrepreneurship education over time, but significant number of researches adopted the positivist approach via quantitative approach (for instance, Elmuti *et al.*, 2012; Sanchez, 2013; Maritz & Brown, 2013; Martin *et al.*, 2013), and few others use interpretive approach (Henry *et al.*, 2005; Almarhy & Sarea, 2018). However, the adoption of a mixed method approach remains scarce in entrepreneurship (Fayolle & Linan, 2014). Further, entrepreneurship education is still evolving (Lackeus & Middleton, 2013), and this is as a result of the multi-dimensional nature of the phenomenon. On this note, scholars have suggested that entrepreneurship programmes should not be based on generic assumption but rather take into consideration the requirements and needs of students (Hynes, 2009; McGee *et al.*, 2009; Sanchez, 2013). Therefore, it becomes imperative to harness the usefulness of entrepreneurship dimensions through observation procedure (positivism) and practical interaction process (interpretivism).

This study adopted the pragmatism research philosophy using a mixed method approach through quantitative and qualitative studies to demonstrate the influence of entrepreneurship education propensity on students' entrepreneurial readiness. Pragmatism is considered the most appropriate philosophical paradigm for mixed method approach (Maxwell, 2011; Creswell, 2014) in that it helps to limit bias associated with the positivist point of view, and the subjective sentiments of the interpretivist (Sekaran & Bougie, 2014; Saunders *et al.*, 2009).

5.3 Research approaches

The choice of research approach is usually informed by either a research study or to develop a theory and test hypotheses through data analysis (Saunders *et al.*, 2009). While deductive approach is affiliated with positivism, inductive approach owes more to interpretivism. However, both approaches involve the development of theory using different research strategies (Sekaran & Bougie, 2016).

5.3.1 Deductive Approach

Deductive approach involves the construction of theory through a scientific test which permits the generalisation of a phenomenon being observed (Wilson, 2014). Deductive approach helps to establish the causal relationship between variables through the test of hypotheses from a

theory. It also emphasises the need for modification of theory after a thorough enquiry of the outcome or findings (Saunders *et al.,* 2009). Deductive approach also possesses the collection of quantitative data through close-ended questionnaire which is subjected to scientific rigor without interference from the researcher. The absence of cognitive reasoning in the process of data collection distort access to detailed information in deductive approach. Hence, the consideration of the inductive approach.

5.3.2 Inductive Approach

Inductive approach is associated with the setting of an event using various methods to gather data in order to explain the characteristics of phenomena (Saunders *et al.,* 2009). Inductive approach is attributed to qualitative research which is design to have more informed decision. It helps to answer the questions about what, where, and how of phenomena (Easterbys-Smith *et al.,* 2008). The inductive approach was also adopted in this study as a follow-up method to establish the nature and pattern of changes of an event through interviews and observation of the participants. However, limitations of the inductive approach have been observed in terms of subjectivity during data interpretations (Muij, 2010; Saunders *et al.,* 2016). Also, the rigid methodological deficiencies of the deductive approach necessitate the decision to adopt both approaches in this study. Although, the ontological and epistemological of both approaches are incompatible (Guba & Lincoln, 1989), the combination of both approaches also known as abductive approach (mixed method) can be conducted in one single research study for complementary purposes (Sale *et al.,* 2002). Table 5.2 depict the differences between deductive and inductive approaches.

Table 5. 2 Differences between deductive approach and inductive approach

	Deductive Approach	Inductive Approach
Role of theory	Testing of theory	Generation of theory
Nature of data instrument	Variables Structured questionnaire and Validated questions design	Words, images, symbols, interviews participants observation open-ended questions
Data analysis	Identifying statistical relationship among variables and test of hypotheses	Use of descriptive data patterns and themes
Results	Generalisable findings	Specific findings; provision of stake-holders viewpoint
Final reports	formal statistics report: correlations, means and statistically significant findings	informal narrative report

Source: Antwi and Hamza (2015, p. 222)

5.3.3 The study approaches

The abductive approach or mixed method was considered suitable for this study. This approach permits the collection of diverse data to best understand a research problem. The abductive approach allows for a broad survey for the purpose of generalisation, and subsequently aims at qualitative unstructured questions to gather participants' responses (Creswell, 2011). The abductive approach is in concordance with the practical worldview in that it helps to achieve the aim of the study which is to measure the effectiveness of psychosocial determinants on entrepreneurial readiness. The achievement of this objective will further aid in the proposition of a conceptual framework of entrepreneurship education in selected TVET institutions in Lagos, Nigeria. In a bid to propose a conceptual framework of entrepreneurship education, quantitative data were collected and analysed to test hypotheses. The quantitative data were analysed using SPSS statistical software (version 25) to determine the cause and effect relationship between psychosocial determinants of entrepreneurial readiness.

Qualitative data were gathered to generate patterns, themes and sub-themes in order to propose a conceptual framework of entrepreneurship education towards entrepreneurial readiness. The qualitative data were analysed using NVivo 12 software.

5.4 Research strategies

Research strategies are techniques that provide specific path for procedure in a research design (Creswell, 2014). The choice of a particular strategy is guided by the research question(s) and objective(s). Therefore, no research strategy is mutually exclusive of the other (Creswell, 2011), what matters is the ability of the strategy to achieve the aim of the study (Sekaran and Bougie, 2009). The various types of research strategies as required in this study are discussed below:

5.4.1 Survey research

Fink (2003) referred that survey research is a process of gathering information from individuals to describe, compare or express their knowledge, attitude and behaviour. In the view of Sekaran and Bougie (2016), survey research is predominant in business research, because it embraces the collection of quantitative and qualitative data in different types of research questions. Therefore, it combines the use of self-administered questionnaire, and structured interviews for data collection (Creswell, 2014; Sekaran & Bougie, 2016). This study employed survey research design to collect data using structured questionnaire, and unstructured questions for in-depth interviews. Similarly, survey design permits the collection of data from a sample of individuals representative of a population for the purpose of generalisation. This study also draws a sample representative of a population in order to be able to generalise the outcome back to the population through interpretation.

5.4.2 Case study design

Case study design is a research strategy that involves the exploration of an event, activity, an individual, a group, a community, or a population (Creswell, 2011). Gilbert (2008) stressed that it is an approach of studying a specific situation, or selected event intensively. Bryman, Bell and Mason, (2015) argued that case study research strategy is the examination of a real-life situation from various perspectives using multiple methods. Similarly, Yin (2009) conceived that it is an empirical investigation of a current phenomenon using various methods of data collection. Sekaran and Bougie (2016) noted that case study research can provide both qualitative and quantitative data for analysis and interpretation. However, Freebody (2003) contended that case study research focus on a specific situation in educational experience and attempt to derive theoretical and professional clue from a detailed documentation of the situation. Upon this premise, Yin (2003) delineated case study research into three categories based on its purpose:

1. Explanatory: explanatory case study is used to investigate how and why an incident occurs with the aim to derive facts of possible cause-and -effect relationship.
2. Exploratory: exploratory case study is adopted to explore events in which the phenomenon is characterised with vague outcomes. Field work and data collection usually take place prior to the development of research questions; and research outcomes are usually perceived from the start compare to other forms of educational research.
3. Descriptive case study is usually adopted to develop a document that clearly reveals the intricacies of an experience, and providing answers to various questions using descriptive theories.

This study employs some characteristics of the case study design to measure the effectiveness of psychosocial determinants of entrepreneurial readiness at three selected TVET institutions in Lagos, Nigeria. The adoption of the case study strategy permits the sampling of exit level students from three TVET institutions, in the investigation of different dimensions of entrepreneurship education such as technical managerial skills, business managerial skills, personal entrepreneurial skills, entrepreneurial self-efficacy, and individual entrepreneurial orientation. These entrepreneurial skills were explored in relation to entrepreneurial readiness for venture creation. The application of the findings from this study is restricted to three selected TVET institutions in Lagos, Nigeria and not generalised to other educational institutions.

5.5 Choice of research methodology for the study

Sahay (2016) stated that the research onion provides an option of a methodological research framework for research adoption. Research methodology is described as the different dimensions of research approach or methods employed in a study for data collection, analysis and interpretation. On the one hand, Rosenau (1992) posited that research methodology is the specific techniques employed to organise research, analyse and interpret data or facts, test hypotheses and produce new knowledge. On the other hand, research method is described as the various ways of executing a research that involves the conduct tests, surveys and the like.

These research techniques of data collection are classified into mono-method, and multi-method, and multiple-method techniques. The use of a single data collection technique is referred to as mono-method (either quantitative or qualitative). Multi-method is the combination of more than one data collection technique with its associated analysis procedure

(using qualitative technique via interviews with non-numerical analysis), this means that the adoption of multi-methods does not permit the combination of quantitative and qualitative technique. But the use of more than a single data collection technique (mixed method) is known as multiple method (using a combination of quantitative and qualitative methods (Saunders *et al.,* 2009). The figure below depicts the illustration of the three types of data collection techniques as discussed above.

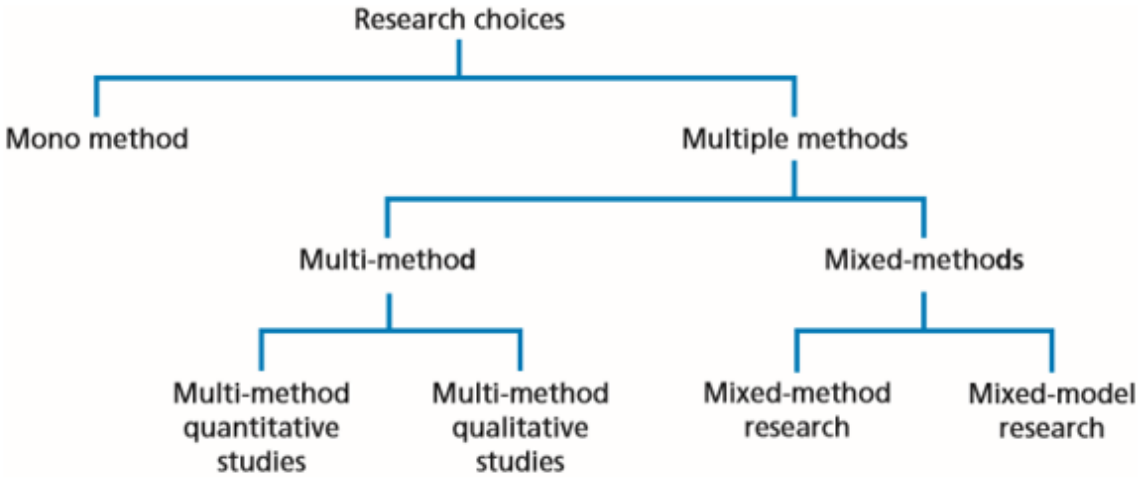

Figure 5. 2 Research choices

Source: Saunders *et al.* (2009, p. 183)

This study adopted the mixed method technique by combining the use of quantitative and qualitative data collection technique. Mixed method originated in 1959 when Campbell and Fisk combined the use of different methods to study validity of psychology (Creswell, 2011). The ability of mixed method technique to reduce bias associated with mono-method technique prompted the interest of many researchers to adopt the combination of quantitative and qualitative research method. Wilson (2014) emphasised that one method approach are more vulnerable to the bias associated to that particular method, but the use of multiple methods provides cross-data validity checks.

5.5.1 Mixed methods research

Mixed methods approach permits the researcher to combine deductive and inductive reasoning in answering the research problem in a study (Sekaran & Bougie, 2014). Mixed method research combines the use of quantitative and qualitative data collection process which could be done at the same time (parallel) or one after the other (sequential). The evolution of mixed method as a data collection technique has led to the development of different procedure of

inquiry as found in extant literatures. Creswell (2014) identified three major mixed method strategies.

5.5.2 Convergent mixed method

Convergent mixed method is a form of mixed method whereby the researcher collects both the quantitative and qualitative data at the same time and merges the information or analysis in the interpretation of the total outcome. This method also involves the collection of data from a small group of people (qualitative) and another data collection from a larger set of participants for the purpose of providing solution to the research problem. According to Creswell (2011, p. 153), *"*the qualitative addresses the process, while the quantitative addresses the outcome*".*

5.5.3 Explanatory sequential mixed method

The explanatory sequential mixed method is a situation in which the researcher first conducts a quantitative methods of data collection and subsequently use qualitative methods to give explanatory support to the quantitative results in details (Creswell, 2014). The explanatory sequential mixed method was adopted in this study. Quantitative data were collected from the exit level students through structured questionnaire, and a follow-up qualitative method was conducted through in-depth interviews with the entrepreneurship teachers at the selected TVET institutions.

5.5.4 Exploratory sequential mixed method

The exploratory sequential mixed method involves the exploration of the research problem with qualitative methods because the research question may not be known, or restriction to access the location. Exploratory sequential mixed method was found inappropriate for this study as the quantitative method of data collection precedes the qualitative methods.

5.5.5 Research method adopted in this study

The explanatory sequential mixed methods were employed in this study as a research technique to propose a conceptual framework of entrepreneurship education towards entrepreneurial readiness at selected TVET institutions in Lagos, Nigeria. Quantitative approach through structured questionnaire was conducted, and the results were analysed. Subsequently, a qualitative research approach was employed using unstructured questions for in-depth interviews. Both approaches were combined (mixed method) to have a robust information about the phenomenon through triangulation of outcomes. The mixed method approach helped to test hypotheses and give answers to the research questions.

5.6 Data collection and data analysis procedures

Data collection and data analysis procedure are described as the step-by-step processes of gathering qualitative or quantitative information and the interpretation of findings for logical reasoning (Kumar, 2014; Saunders *et al.,* 2014). The process of data collection and analysis, study site, target population, sampling frame, sampling techniques, sample size, data collection, scale measurement, and data analysis were discussed in subsequent sections below.

5.6.1 Study site

Lagos was chosen as the study site. This is due to the fact that it is the foremost city in Nigeria which has the highest density of industries that absorb graduates from TVET institutions, as well as being the commercial hub of Nigeria. Similarly, some of the major entrepreneurship clusters in technology domain, such as the famous Alaba International Market in Ojo, and Computer Village in Ikeja, are located in Lagos State. Besides, Lagos arguably possess the highest literacy rate in Nigeria. The principals of the selected TVET institutions permitted that the name of the institutions be mentioned in the thesis, but the selected entrepreneurship teachers advised that the name of the institutions be protected if they must participate in the study. As a result, this study made use of pseudonyms to represent the names of the three TVET institutions in this study. According to Merriam Webster Dictionary (2021), pseudonyms are fictitious names given to an individual or place used in research to protect the identity of research component. This study made use of pseudonyms to maintain the protection of sensitive information as ethically required.

5.6.2 Target population

Wilson (2014) defined research population as the set of cases from which sample is drawn. As described by Saunders *et al.,* (2016), it is the total group of people, events, or things of interest whereby the researcher intends to draw inferences. Target population allows the researcher to be able to determine the relationship or peculiarity of a phenomenon to the participants involved. It is from a targeted population that a sample is drawn as a representative of the entire population.

Target population in this study comprised the exit level students, and entrepreneurship teachers from three selected government TVET institutions located in Lagos Metropolis, Nigeria. Approximately, there are 3,120 exit level students, and 39 entrepreneurship teachers in government TVET institutions in Lagos (Online source). The entrepreneurship teachers have more than fifteen years' experience in teaching entrepreneurship and curriculum design. There

are five TVET institutions owned by the Lagos State Government (LASTVEB, 2017), and two TVET institutions owned by the federal government (NBTE, 2004). Using convenient sampling technique, two state-owned TVET institutions were selected for ease of accessibility and management support through the issuance of gatekeepers' letters for the research to be conducted. Further, one federal TVET institution was selected making a total of three selected TVET institutions. This study aims to investigate psychosocial determinants of entrepreneurial readiness. The outcome of this inquiry will assist in proposing a conceptual framework of entrepreneurship education for the selected TVET institutions in Nigeria.

5.6.3 Sampling frame

Sampling frame refers to all the set of elements that is available for selection during the sampling stage (Sekaran & Bougie, 2016). The total number of the registered exit level students, and the entrepreneurship teachers from the three TVET institutions in Lagos Metropolis, Nigeria, as at the time of data collection for this study in October 2019 were sourced from the school register and displayed in the table below.

Table 5. 3 List of exit level students and entrepreneurship teachers at the three selected TVET institutions

Institutions	Students	Entrepreneurship teachers
Federal TVET college	827	7
Lagos TVET college A	182	5
Lagos TVET college B	203	5
Total	1212	17

Source: Author's compilation

The sampling frame for the number of exit level students were 1212, while that of the entrepreneurship teachers was 17 as depicted in Table 5.3 above.

5.6.4 Sampling techniques

Sampling techniques refer to the various methods adopted in the selection of a sample size. There are two major types of sampling techniques namely probability and non-probability sampling technique (Sekaran & Bougie, 2016). Kumar (2014) posited that sampling is the process of selecting a few samples from a larger population to become the representative of the population for predicting the predominance of a phenomenon or situation with regards to the

population. The probability of each element or unit in a population to have an equal chance of being selected and independent chance of selection in a sample is referred to as probability sampling (Wilson, 2014; Kumar, 2014). Non-probability sampling refers to unknown chance of each element or unit in a population to be selected (Wilson, 2014).

5.6.5 Probability sampling techniques

Also known as random sampling strategies, probability sampling technique is the choice of an element in a sample to be selected without any personal, or external influence. Thus, every element has an equal opportunity of being selected in a study. The most common sampling technique is discussed below.

5.6.5.1 Simple random sampling

Simple random technique refers to a technique in which every element in a population has a known and equal chance of being included as a subject of study (Sekaran & Bougie 2016; Wilson, 2014). Simple random technique has the least bias process that allows for most generalisability (Sekaran & Bougie, 2016). It is important to note that some of the weaknesses of this technique is that it may become rigorous and expensive. Furthermore, selection of the most updated list of population may not be available (Sekaran & Bougie, 2016). Therefore, researchers may consider the use of other probability sampling techniques.

5.7 Non-probability sampling techniques

Non-probability sampling is well documented in case-study research design and qualitative approach. Case studies research usually focus on small sample group of individuals, and data generated are aimed at examining a real-life situation. The small sample of individuals is not required to be a representative of the whole population, but a clear justification is needed for the inclusion of some selected cases or individuals rather than others (Wilson, 2014). Therefore, non-probability random techniques severely limit a study's generalisability, but the findings can be generalisable to the sampled population involved (Lodico *et al.,* 2006). Sekaran and Bougie (2016) argued that non-probability sampling provides a range of alternative strategies to include some specific sample based on the researcher's subjective judgement. The choice of a particular sampling technique is often informed by the research objectives, research questions, and research strategies. Some of the non-probability sampling techniques were explained below.

5.7.1 Convenient sampling

Convenient sampling refers to the collection of information from group of individuals who are conveniently available to provide it. Saunders *et al.*, (2016) noted that it involves the selection of cases that are easily accessible as research sample. Convenient sampling helps to overcome some of the challenges faced in selecting a sample. For instance, gaining access to a drug group to get information on drug trafficking may be very difficult. The researcher may conveniently get such information from the list of drug trafficking cases available at the Police department. However, convenient sampling is prone to bias and inability to make generalisation. Out of the five state-owned TVET institutions in Lagos Metropolis, two were selected together with one federal TVET college. This is based on ease of access and interest shown to provide necessary information through in-depth interviews and support for the researcher. This justifies the adoption of convenient sampling technique.

5.7.2 Purposive sampling

Purposive sampling is a non-probability sampling strategy that is based on the researcher's judgement. It is also referred to as expert sampling (Kumar, 2014), or judgmental sampling (Sekaran & Bougie, 2014). The researcher purposively selects experts who can provide the best information to answer the research questions. Purposive sampling allows the researcher to use his/her judgment to include only those that have required knowledge or information about the phenomenon in which little is known (Kumar, 2014; Wilson, 2014). Purposive sampling was employed in this study to select the entrepreneurship teachers that are vast in the knowledge of entrepreneurship education, and with more than twenty years experiences in curriculum development. The position occupied by the entrepreneurship teachers at the selected TVET institutions formed part of the consideration in including the participants in the study sample. Qualitative data were gathered from the selected participants through in-depth interviews on the effectiveness of entrepreneurship education in determining the exit level students' entrepreneurial readiness for venture creation.

5.7.3 Adopted sampling techniques for this study

This study used non-probability sampling strategies to get the right participants. The study site is Lagos State, Nigeria. The three selected technical colleges for data collection were located in Lagos city, which has the highest density of industries that absorb graduates from such institutions.

Convenience sampling technique which is a type of non-probability sampling was adopted to select three TVET institutions in Lagos state. Homogenous purposive sampling strategy was used in the selection of nine senior entrepreneurship teachers who participated in the in-depth interviews for qualitative data. Homogenous purposive sampling was adopted to enable the researcher to use own judgement to select senior staff members of the same discipline who have sufficient knowledge of the research problem to participate in interview for inductive reasoning. A combination of qualitative and quantitative approach was adopted to measure the effectiveness of psychosocial determinants of entrepreneurial readiness.

5.7.4 Sample size

Lodico, *et al.*, (2006) argued that sample size is a smaller group from a larger population that is representative of the larger population. Sample size makes it easy for a researcher to study a manageable subgroup that is realistic from the larger population. Three TVET institutions were selected in Lagos Metropolis. A total of 1212 exit level students were surveyed for quantitative study. Wilson (2014) argued that a sample size of 95% or 99% confidence level has a true population value within the range of precision. Using Taro (1967) equation model, a sample size of 301 was determined and calculated at 95% confidence level for the sample size.

Taro's equation model is calculated below:

Where $n = \frac{N}{1+N \times (e)^2}$

n = sample size

N= total number of students

e = 0.05 error degree of freedom

Thus: $n = \frac{1212}{1+1212\times0.0025}$

$\frac{1212}{1 + 3.03 = 4.03}$

$n = \frac{1212}{4.03}$

n = 301 exit level students.

Nine senior entrepreneurship educators from the three TVET institutions were selected as the participants for in-depth interviews. Wilson (2014) argued that the more heterogenous a population, the larger the sample required to form a representative sample, on the other hand, the more the homogenous a population, the less the variability in the distribution of the features. Homogenous purposive sampling was adopted to select nine senior entrepreneurship teachers with more than fifteen years of experience in teaching entrepreneurship and developing entrepreneurship curriculum at TVET institutions. This aided the provision of required information for the qualitative data collection. Homogeneous purposive sampling helps to select a particular subgroup where sample participants are similar in a specific occupation in an organisation (Saunders *et al*, 2016).

Table 5. 4 Questionnaire administration in each institution

Institutions	Distributed questionnaire	Interview participants
Federal TVET college	185	03
Lagos TVET college A	55	03
Lagos TVET college B	61	03
Total	301	09

Source: Author's compilation

The senior entrepreneurship teachers include, the Dean of the Department of Entrepreneurship, and Heads of Department (HOD) of entrepreneurship, across the three selected TVET institutions. This sample formed the interview participants for qualitative data collection.

5.7.5 Pilot study

Both the qualitative and quantitative instruments were piloted before the main research. Saunders *et al.* (2009) suggested that a pilot study is a mini version of the full research which tests the research protocols and methods. The motivation behind the pilot study is to assess whether the study is feasible. Another motivation is to measure the reliability and validity of the instruments. The pilot study was conducted with 10 exit level students (questionnaire) and three entrepreneurship teachers (interviews) each from the above-mentioned institutions. The pilot study lasted for a period of two weeks. Each interview session lasted about thirty minutes. The research instrument for quantitative data revealed a reliability value of 0.82, with high factor loading value above 0.5. There was a need to further modify the research instrument for

qualitative data as some of the entrepreneurship teachers could not comprehend some of the concepts in the questions. Simple terms were used as open-ended questions to gain adequate information from the interview respondents.

5.8 Data collection methods

The mixed methods approach was used in this study. Specifically, the explanatory sequential mixed method was found useful for this study.

5.8.1 Explanatory sequential mixed methods

Structured questionnaires were administered to exit level students to gather quantitative data. Afterwards, qualitative data collection was implemented through in-depth interviews with nine entrepreneurship educators (three from each institution) using structured and unstructured questions to elicit information with respect to the research questions. This pattern follows the sequential mixed method approach, in which qualitative data is collected as a follow-up to the quantitative data. This is done to have more insight or sufficient knowledge about the phenomenon being studied (Creswell, 2003). It is worthy of note that one of the entrepreneurship educators declined the interview session, with the claim not to divulge any information as a government official.

5.8.2 Quantitative data collection

The content of the structured questionnaire contained closed ended questions, and was useful in the collection of quantitative information from the exit level students. The items under each construct were extracted from extensive literature review in order to derive accurate answers from the participants in relation to the phenomenon being studied. The structured questionnaire was designed into ‘section A’ and ‘section B’. Section A focused on the demographic measure of the respondents, which includes gender, marital status, department, and age group. Section B includes constructs and items designed to generate relevant responses from the respondents to achieve the research objectives, which aims to examine psychosocial determinants of entrepreneurial readiness at three selected TVET institutions in Lagos Metropolis. A six-point Likert scale was developed to measure the response scale ranging from 6 (Strongly Agreed) - 5, (Agreed) - 4, (Slightly Agreed) – 3, (Slightly Disagreed) – 2, (Disagreed) - and 1, (Strongly Disagreed). Selection of scale may not be generally consensual, but may depend on the empirical setting (Chang, 1994).

Likert scale is a composite measure designed by Rensis Likert who attempted to improve the degree of measurement in social research through the use of a standardised response scale in survey questionnaires (Rubin & Babbie, 2014). Fraenkel and Wallen, (2003) noted that Likert scale is a common attitude scale used in educational study, where a 5 (strongly agree) will indicate a positive attitude, and on the other, a 1 (strongly disagree) will indicate a negative attitude. The items were adapted to measure eleven sub-constructs in this study. The Cronbach's alpha coefficient of all the items were above the minimum requirement of 0.7 threshold. The four constructs include entrepreneurship education with three sub-constructs (technical skills, business managerial skills, and personal entrepreneurial skills), entrepreneurial self-efficacy with four sub-constructs (searching, planning, marshalling, and implementing), individual entrepreneurial orientation with three sub-constructs (risk-taking, innovativeness, and proactiveness), and entrepreneurial readiness. Items measuring the constructs were distributed under each sub-construct for the respondents to provide required answers on a 6-point Likert rating scale. A total of eighty-two (82) items were adapted to elicit required information from the survey respondents. The index tools adapted to measure each of the construct in the survey questionnaire were illustrated below.

5.9 Measurement index adapted for the study

The measuring tools adapted in this study are drawn from extensive literature review with specific reference to the four constructs which includes; entrepreneurship education, entrepreneurial self-efficacy, individual entrepreneurial orientation, and entrepreneurial readiness. The various measurement scale adapted in each construct are explained below.

5.9.1 Entrepreneurship education

The three elements used to measure entrepreneurship education were technical skills, business management skills, and personal entrepreneurial skills. The scale developed by Ibrahim and Goodwin (1986), and validated by Elmuti *et al*. (2012) demonstrated that entrepreneurial behaviour, personal skills, and managerial skills are crucial factors to successful business management. These findings underscore the pivotal role of entrepreneurship education in developing behavioural and managerial skills. A total of thirty-seven (37) modified items were used to measure entrepreneurship education with its elements (technical skills, business management skills, and personal entrepreneurial skills), and the respondents were asked to respond to the extent to which they possess these skills.

5.9.2 Entrepreneurial self-efficacy

Entrepreneurial self-efficacy was measured with McGee *et al.,* (2009) ESE multi-dimensional scale. Nineteen items were pruned and validated with an internal consistency of 0.80 reliability. The items focused on ESE task-specific phases on searching, planning, marshalling, and implementing questions of becoming nascent entrepreneurs. Another modified 22 items by Maritz and Brown (2013) with Cronbach alpha 0.972 was also considered in developing another adapted 22 items for measuring ESE task-specific phases in this study.

5.9.3 Individual entrepreneurial orientation

Individual entrepreneurial orientation was measured according to the items developed and validated by Bolton and Lane (2012). The 10 items instrument developed by Bolton and Lane measured the three dimensions of IEO (risk-taking, innovativeness, and proactiveness) with a reliability coefficient of 0.7. This reliable instrument was also supported by Vogelsang (2015) by adopting similar items in measuring entrepreneurial orientation of students at individual level.

5.9.4 Entrepreneurial readiness (ER)

An Entrepreneurial Readiness Index (ERI) as developed by Coduras *et al.*, (2016) was modified to measure the construct entrepreneurial readiness. The Work Readiness Scale (WRS) of 64 items as developed by Caballero, Walker and Tyszkiewicz (2011) was also useful in extracting few adapted items to measure the exit level students' entrepreneurial readiness. A total of 13 adapted items were designed and validated with an internal consistency of 0.90 to measure the ER construct.

5.9.5 Interviews

In-depth interviews, using structured questions, were conducted to elicit qualitative information with regards to the research questions. The interviews were conducted with each interviewee at different periods with follow-up telephonic interviews. An audio recording device was used to record the responses from the respondents. The choice of research questions for the qualitative data was informed by the outcome of the quantitative analysis. The interview sessions involved questions relating to entrepreneurship trainings, entrepreneurial self-efficacy, individual entrepreneurial orientation and entrepreneurial preparedness of the students. Interview questions were sent to the participants before scheduling a convenient time to conduct the interview. This was done to give the participants ample time to understand the

concepts and supply the required information. Each interview session lasted about thirty minutes.

5.10 Methods of data analysis

The methods of data analysis involve the various statistical tools used in analysing the quantitative and qualitative data gathered from the structured questionnaire and detailed interviews.

5.10.1 Structured questionnaire

The structured questionnaire was helpful to generate quantitative data. The data was coded using the Statistical Package for Social Sciences (SPSS Version 25) to conduct descriptive statistics, items reliability, standard deviations, bivariate analysis, exploratory factor analysis and multiple regression analysis for hypotheses testing. All the three objectives were subjected to quantitative analysis, and the statistical tools employed were discussed further below.

5.10.2 Descriptive statistics

Descriptive statistics refers to the representation or presentation of demographic data using statistical information such as the measure of central tendency (Sekaran & Bougie, 2016). It helps to infer meaningful information from raw data when presented in charts, graphs, or tables. Descriptive statistics was employed to give meaning to the section 'A' part of the questionnaire. The demographic information of the respondents was illustrated in terms of gender, age, marital status and departments. The frequency tables were also helpful in determining the response rates.

5.10.3 Inferential statistics

Wilson (2014) noted that inferential statistics are used to extract inferences concerning a sample in a given population. Further, it is subdivided into parametric and non-parametric. A parametric statistical test is appropriate when the following conditions are met;

1. When the data is made up of interval or ratio data
2. When the sample is randomly selected from the sample frame, and
3. When the sample is from a population that is normally distributed (Wilson, 2014).

If the abovementioned conditions are not met, non-parametric test should be applied. Saunders *et al.,* (2009) asserted that not-parametric test owes more to categorical data, and skewedness of data in a normality test while parametric test applies to numerical data. The parametric tests

adopted in this study provided the basis for the quantitative analysis in responding to the research questions, and test of hypotheses.

5.10.3.1 Pearson's Product-Moment Correlation Coefficient

Pearson's Product-Moment Correlation (PPMC) is a statistical formula used to analyse the relationship between two continuous variables (Muij, 2010). PPMC offers a researcher the ability to determine the strength of the linear relationship between two numerical relationship (Saunders *et al.*, 2009). The two major correlation coefficient that is used in social research are the Pearson's Product-Moment Correlation which is associated with numerical data (parametric), and Spearman's Rank Correlation which is applicable to ranked data (non-parametric). Parametric tests generally believed to be more powerful in that it allows a researcher to reject a false null hypothesis (Lodico *et al.*, 2006). The PPMC was employed in this study to determine the bivariate relationships between dimensions of entrepreneurship education and entrepreneurial readiness of the students at the selected TEVT institutions.

The PPMC coefficient is denoted 'r' and calculated thus:

$$r = \frac{\Sigma xy - \frac{\Sigma x \Sigma y}{n}}{\sqrt{\left(\Sigma x^2 - \frac{(\Sigma x^2)}{n}\right)\left(\Sigma y^2 - \frac{(\Sigma y^2)}{n}\right)}}$$

Where:

n = the number of data pairs

y = the dependent variable

x = the independent variable

√ = square root

∑ = the sum of

Muij (2010) stated that Pearson's coefficient varies between -1 and +1, in which the +1 value indicates a perfect positive relationship, and on the other hand, -1 indicating a perfect negative relationship. In other words, a positive correlation suggests that a high score on X means high scores on Y, while a negative correlation indicates that a high score on X means low scores on

Y, and 0 indicating no relationship. The PPMC, through the application of IBM SPSS (version 25) was used in this study to respond to the research questions.

5.10.3.2 Multiple regression analysis

According to Wilson (2014), simple regression analysis which is a statistical technique enables the investigation of the strength of a relationship between two variables. Multiple regression enables a researcher to calculate the effect of more than one independent variables on a dependent variable (Cohen, Manion & Morrison, 2007). Cohen *et al.,* (2007) argued that multiple regression permits the prediction of a relationship between two or more explanatory-independent-variables and an explained-dependent-variable. Consistent with this is Sekaran and Bougie (2016) assertion, that multiple regression is a multivariate technique that uses more than one independent variable to explains variance in the dependent variable. The associated coefficient is denoted (r^2) and the formula is calculated thus:

$$y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + \dots$$

Where; y= dependent variable

x = independent variable

a = point of intersection on the y axis.

b= gradient of the line

Multiple regression was conducted in this study to test the four hypothesised statements in order to achieve the research objectives. Multiple regression was appropriate in the establishment of extent of variance or prediction between entrepreneurship education propensities and entrepreneurial readiness. The employment of multiple regression was helpful in demonstrating the predictive strength of each sub-construct of the independent variables on the dependent variable.

5.10.3.3 Exploratory factor analysis

According to Muijs (2010), factor analysis is a statistical technique that basically performs a parsimonious action by reducing a set of variables to a smaller unit of underlying factors and determines structure in the relationships between variables. Factor analysis helps to group variables that may have common relationship together as an underlying latent variable that may not have been measured. In order for items to be part of a factor, it becomes essential to be

strongly correlated to one another and less strongly correlated to other variables (Muijs, 2010). Factor analysis was conducted in this study, and the Principal Component Matrix was useful in determining the factor loadings of the variables.

5.10.3.4 Thematic analysis

Qualitative data are mostly associated with thematic analysis. Qualitative data are non-numeric data that have not been quantified (Saunders *et al.*,2016). The qualitative information gathered through in-depth interviews were transcribed and analysed using thematic analysis. The adoption of thematic content analysis in this study enables the researcher to reduce the qualitative information into a meaningful size that helps put all the data into different themes and sub-themes. (Sekaran & Bougie, 2016). The statistical software, NVivo 12 was helpful in coding the transcribed data into nodes and patterns for analytical representation. The themes and sub-themes that emerged from the NVivo software were analysed through thematic analysis and interpretations were given to text with regards to the research questions.

5.11 Reliability

Reliability refers to the measure of internal consistency of research items. Cohen *et al.,* (2007) stated that reliability is the trustworthiness, consistency and replicability in relation to time, measurement and group of individuals. Reliability is concerned with precision and accuracy of a measure. Sekaran and Bougie (2016) posited that reliability is the test for both consistency and stability, in which consistency is concerned with the accuracy of the items in relation to the construct being investigated. Cronbach's alpha is the reliability coefficient that measures how items in a set are positively correlated (Sekaran & Bougie, 2016). In research, the minimum threshold for acceptable Cronbach coefficient of a measuring scale is 0.7. The nearer the coefficient alpha to 1, the stronger the degree of reliability of the measuring instrument. The Cronbach's alpha of all the items in this study are above 0.7, and a pilot study was conducted to also verify the reliability of the instrument on 20 respondents from the selected TVET institutions.

5.12 Validity

Creswell (2011) suggested that it is essential to establish validity of a score in a survey in order to determine if an instrument might have positive outcome in a survey research. Validity refers to the extent to which a survey instrument measures what it is supposed to measure (Wilson, 2014; Sekaran & Bougie, 2016). Validity of a research instrument is known as the test of

goodness of measure. Cohen *et al.,* (2007) identify some conditions required to ensure goodness of measure in survey instruments.

1. Selection of appropriate time instrument
2. Ensuring sufficient resources to execute the research
3. Using appropriate methodology to answer the research questions
4. Choosing the required instrument for data gathering
5. Selecting an appropriate sample that is representative of the population.

The validity of the scales was achieved using the content validity. This validity measure was helpful in determining the internal accuracy of all the variables as each value is higher than the minimum threshold of 0.5 as revealed by the loadings of each construct. This indicated that all the constructs were able to predict more than 50% variance.

5.13 Limitation of the study

One of the limitations of the study is the narrow focus on the exit level students from TVET institutions in Lagos Metropolis, Nigeria. Lagos State is one of the thirty-six states in Nigeria. The perceptions and contributions of exit level students from other states were excluded from this research study. Hence, the findings of this study may not be generalised to the whole population of exit level students at TVET institutions in Nigeria. Nevertheless, the sample population in this study covers TVET students from the city centres, where entrepreneurial skills are in high demands. Some predictors of entrepreneurship readiness are traits-specific; thus, it may be difficult to determine what constitutes a conceptual framework for specific individuals. However, ten sub-constructs were considered in this study, in which previous studies have confirmed to be positively significant with entrepreneurial behaviours.

5.14 Ethical considerations

The University of KwaZulu-Natal's ethical requirements for carrying out a research was firmly observed in this study. Approval letter was granted by the Lagos State Government to proceed to Lagos State Vocational Educational Board (LASTVEB) for the collection of gatekeepers' letters. Gatekeepers' letters were issued by the three TVET institutions. Informed Consent Note was completed, and Ethical Clearance Application was completed on the Research Information Gateway (RIG). The Informed Consent Note, gatekeepers' letters, and the research instruments were submitted to the Humanity and Social Sciences Research Ethics Administration through the RIG system of the University of KwaZulu-Natal (UKZN). Ethical Clearance Certificate

with reference number HSSREC/00000289/2019 was issued on 17th September 2019. The steps taken to ensure compliance with the ethical standard of the UKZN were highlighted below:

- Gatekeepers' letters were collected from the selected institutions through the approval of LASTVEB and Lagos State Government.
- Permission to conduct the survey was granted through the signing of the gatekeepers' letters.
- The anonymity of the students and staffs of the selected institutions was ensured through the signing of the informed consent.
- A confidentiality clause was included in the covering letter to all the participants in ensuring privacy and confidentiality. The researcher made sure that the participants' names were substituted with pseudonyms and as well limit their identities within the thesis, oral presentations and subsequent publications. Also, the researcher ensured that all information elicited from the research participants were kept at a safe place in the University.
- The survey was conducted with the students and in-depth interviews with the entrepreneurship teachers of the selected institutions on the date approved for questionnaire distribution.
- The consent of the interviewees was sought before the start of the interview, and were informed that their responses are being recorded.
- The hard copies of the data collected from the survey will be kept with the UKZN for archive.

5.15 Chapter summary

This chapter illustrated the various research methods adopted to establish the research objectives in this study. The different perspectives of the philosophical worldviews with strengths and weaknesses were addressed before the adoption of the pragmatic paradigm as the suitable philosophical worldview in this study. The research approaches which includes deductive, inductive and abductive were discussed, but the abductive approach was found appropriate in this study considering the type of methods used for data collection. A case study research design was found justifiable after a careful examination of other research designs. The explanatory mixed method was valuable for the collection of data and analyses. This chapter also discussed the various types of sampling strategies. Convenience sampling strategy was adopted in choosing the participants for the collection of quantitative data, while homogenous

purposive sampling technique was employed in selecting the respondents for the in-depth interviews to gather qualitative data.

The statistical tools for data analysis such as SPSS version 25 for quantitative analysis, and NVivo 12 for qualitative data analysis were explained in this section. The reliability and validity of the research instruments were also examined according to statistical standardisation. The limitation of the study and the ethical procedure were also illustrated. The outcomes of both quantitative and qualitative data analysis were all addressed in the subsequent chapter.

CHAPTER SIX

DATA ANALYSIS AND INTERPRETATION OF RESULTS

6.1 INTRODUCTION

A mixed method research approach was adopted for this study. This entailed the collection of empirical data (quantitative) through the distribution of structured questionnaires, and conducting of in-depth interviews (qualitative) to inductively gather information using an audio recorder. The quantitative data was analysed using the SPSS (version 25). The data collected were coded directly into the SPSS software for analysis and tabular presentation of data. The coded data in the SPSS was used to analyse the demographic section (section 'A') of the questionnaire through descriptive statistics. The Pearson Product Moment Correlation was used to determine association effect of variables to achieve the research objectives. Furthermore, multiple regression was applied to demonstrate the impact of cause and effect relationships among the variables to achieve the research hypotheses.

Qualitative data collection was conducted as additional information to the quantitative data. This was done to buttress the results obtained from the quantitative analysis. NVivo version 12 was used to analyse the qualitative information gathered via detailed interviews from the respondents. Information gathered from the interviewed respondents was transcribed and imported into the NVivo software for coding and chart analysis. Thematic analysis was demonstrated by creating nodes and sub-nodes. A theme was denoted with parent node, while a sub-theme was denoted as a child node. This chapter explains the data analysis and the interpretation of results.

6.2 Response rate

A total of 301 questionnaires were distributed among the students, 296 were filled and returned. Among the 296 that were returned, seven were scantly filled and incomplete, and were therefore discarded. The remaining 289 questionnaires which constitute valid response rate of 96% were coded and analysed. The response rate (96%) is greater than the minimum recommended response rate of 60% acceptable threshold as suggested by Johnson and Wislar (2012). All the interview participants gave detailed information and showed more interest in the research. But one of the participants was reluctant to divulge any information. The participant was against being recorded as a government employee. Therefore, 88% response

rate was achieved for the interviewed participants. The high response rate was probably due to the consent given by the Lagos State Government and the management of Lagos State Vocational Education Board (LASTVEB) for this research to be conducted, and interest in the outcome of the research findings. The high response rate was also achieved through effective interpretation of all the questions to the students by the entrepreneurship teachers, which facilitates better understanding.

The analysis and presentation of findings started with the demographic information of the sample. This is followed by the descriptive statistics, analysis of scales and research questions. Also, the inferential statistics, such as the Pearson correlation coefficient and multiple regression were presented in this chapter. This chapter ends with the thematic analysis and presentation of data via the NVivo 12 software for the qualitative analysis.

6.3 Analysis of respondents' demographic data

The demographic information is divided into four sections. These sections include, gender, marital status, department and age distribution. This information was helpful in determining the target population which are the youth.

Table 6. 1: Gender Analysis

Gender	Frequency	Percentage
Female	130	45
Male	159	55
Total	289	100

Source: Author's compilation

Table 6.1 shows the gender of students in terms of frequency and percentage at the three selected TVET institutions in Lagos State, Nigeria. The scheduled sample size for this study was 301, Out of these respondents, the total number of male students were 159 representing 55 % of the sample and their female counterpart were 130 which represents 45 % of the sample size. The marital status of the respondents is presented as shown in Table 6.2 below.

Table 6. 2: Marital Status of the Respondents

Marital Status	Frequency	Percentage
Single	288	99.7
Married	1	0.3
Total	289	100

Source: Author's compilation

Table 6.2 reveals that almost all the students were single (99.7%) and still at their teenage age. This outcome shows the actual representation of the target population for this study. The youth age in Nigeria is between 18 to 39, which represent 60% of the total population (Oduwole, 2015). The next demographic data as shown in Table 6.3 below depicts the various departments of the students at the selected TVET institutions.

Table 6. 3: Students' Departments

	Departments	Frequency	Percentages
1	Business studies	87	30.1%
2	Computer science/Engineering	51	17.6%
3	Automobile engineering	41	14.2%
4	Catering	26	9%
5	Graphic arts	26	9%
6	Mechanical craft Engineering	24	8.3%
7	Electrical/Electronic engineering	2	0.7%
8	Bricklaying and Concrete making	2	0.7%
9	Garment making	2	0.7%
10	Welding and Fabrication	17	5.9%
11	Plumbing and Fittings	11	3.8%
	Total	289	100%

Source: Author's compilation

Table 6.3 shows the department which the students represent. 11 departments were captured in the study from the selected TVET institutions. Majority of the respondents which represents 30.1% were from the Business studies department, followed by computer engineering 17.6%, automobile engineering 14.2%, Catering 9%, Graphic Arts 9%, Mechanical craft Engineering 8.3%, Electrical/Electronic Engineering 0.7%, Bricklaying and Concrete 0.7%, Garments

making 0.7%, Welding and Fabrication 5.9%, and Plumbing and Fittings 5.9%. The result also showed that 30% of the students (business studies) were interested in becoming business owners. However, students' interest in science-related courses such as Mechanical craft Engineering (8.3%), and Electrical/Electronic Engineering (0.7%) is still low.

The age range of the students is illustrated below.

Table 6. 4: Age Distribution

Age	Frequency	Percentage
Below 20years	240	83%
20-24years	45	15.6%
25-29years	2	0.7%
35years or more	2	0.7%

Source: Author's compilation

Table 6.4 shows that the majority of the respondents representing (83%) were below age 20, 15.6% were between the ages of 20 to 24, 0.7% were between the ages of 25 to 29, and 0.7% were of age 35 and above. The age range for youth in Nigeria context according to Nigeria's National Youth Development Policy (2001) is between 18 to 35 years. This implies that about 99.03% of the participants were mainly the youth.

6.4 Descriptive Statistics for the Research Constructs Measurements

Table 6.5 to 6.15 captured the responses to the research questions on all the research constructs.

Table 6. 5 Perceptions of Students on Individual Entrepreneurial Orientation (IEO)

		Strongly disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
	RISK-TAKING							
1.1	I am willing to take risks in order to achieve a goal	11 (3.8%)	12 (4.1%)	19 (6.6%)	57 (19.7%)	130 (45.0%)	60 (20.8%)	289
1.2	I am more energized in situations where the outcomes have uncertainty and risk than in situations where the outcomes are predictable	13 (4.5%)	26 (9.0%)	31 (10.7%)	61 (21.1%)	123 (42.6%)	35 (12.1%)	289
1.3	I am willing to take a loan to start a small business	19 (6.5%)	30 (10.4%)	47 (16.3%)	64 (22.1%)	95 (32.9%)	34 (11.8%)	289
1.4	I tend to act 'boldly' in situations where risk is involved	17 (5.9%)	22 (7.6%)	29 (10.0%)	79 (27.3%)	105 (36.3%)	37 (12.8%)	289
1.5	I am willing to spend money on something that might give a high profit	22 (7.6%)	17 (5.9%)	29 (10.0%)	79 (27.3%)	105 (36.3%)	37 (12.8%)	289

Source: Author's compilation

Table 6.5 illustrates the students' responses on their IEO – risk-taking skills. An estimate of 20.8% of the respondents strongly agreed, while 45% agreed and 19.7% slightly agreed that students will be willing to take risk in order to achieve their goals. This study found that a large majority of the students (85.5%) believed that they will be willing to take the risk to achieve their aim. About 12.1% of the respondents with valid responses were in strong agreement, while 42.6% agreed and 21% slightly agreed that students are more active in situations with uncertain outcomes rather than predictable outcomes.

Further, 11.8% of the respondents showed strong agreement, and 32.9% agreed and 22.1% slightly agreed that they were willing to take loan risk in order to start a small business. A total of 66.8% were willing to take business risk through loan to become a business owner, while 33.3% were not courageous enough to venture into business through loan risk. Table 6.5 also indicates that 12.8% strongly agreed, while 36.3% agreed and 27.3% slightly agreed that students can exhibit boldness in a situation that involves risk. The total of responses for each question is indicated in the last column of the Table (Total (n)). The outcome of the responses also reflects that majority of the exit level students (80.3%) were willing to take business risk on a venture with high profit prospect. This shows that business profitability is a motivation for taking business risk. This affirms the finding of Hu and Xie (2016), in which the authors found that risk taking has positive relationship with profitability in the Chinese banking industry. In similar vein, Koe (2016) empirically demonstrated that risk taking ability has

significant impact on entrepreneurial entry, and the aversion of risk hinders entrepreneurship activities (Wennberg, *et al.*, 2013).

Table 6. 6: Perceptions on innovative Skills

INNOVATIVENESS								
		Strongly disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
1.6	When doing a project, I prefer to use a unique, one-of-a-kind approach rather than using approaches that have been used before	9 (3.2%)	19 (6.6%)	11 (3.9%)	38 (13.3%)	123 (43.0%)	86 (30.0%)	286
1.7	I often like to try new and unusual activities that are not necessarily risky	10 (3.5%)	26 (9.1%)	21 (7.3%)	32 (11.1%)	137 (47.7%)	61 (21.3%)	287
1.8	I prefer new and original methods to solve problems rather than using other people's methods of solving problems	6 (2.1%)	15 (5.2%)	8 (2.8%)	33 (11.5%)	122 (42.5%)	103 (35.9%)	287
1.9	I prefer to try my own unique way when learning new things rather than doing it like everyone else does	3 (1.1%)	12 (4.2%)	11 (3.8%)	24 (8.3%)	115 (39.9%)	123 (42.7%)	288
1.10	I have the ability to think up new ideas and activities	4 (1.4%)	1 (0.4%)	9 (3.1%)	24 (8.3%)	122 (42.4%)	128 (44.4%)	288
1.11	I like to try new things	7 (2.4%)	5 (1.7%)	2 (0.7%)	8 (2.8%)	114 (39.6%)	152 (52.8%)	288

Source: Author's compilation

According to the presentation in Table 6.6, 29.9% of the students strongly agreed, 42.6% agreed and 13.1% slightly agreed that they prefer to use a unique idea of their own in completing a project rather than using an existing approach. This indicated that 85.6% of the students prefer to generate their own unique idea in complete a task. Additionally, 21.1% strongly agreed, 47.4% agreed, and 11.1% slightly agreed to try new and unusual activities that is not necessarily risky. This suggests that 79.6% often get involved in unusual activities for new discoveries, while 20.4% do not engage in unusual activities. The students' perception on using new and original method to solving a problem rather than using other peoples' method showed that 36.6% strongly agreed, 42.2% agreed, and 11.4% slightly agreed. An encouraging percentage 90.2% of exit level students were willing to use new innovative ideas to solve problems.

A strong agreement of 42.6%, 39.8% agreement and 8.3% slight agreement was indicated by the students on using personal unique idea to learn new things rather than doing it like everyone else. This implies that 90.7% of the students have different unique ways of learning new things.

These findings buttressed the assertion of Kolb (2014), in which the author stated that individuals have different learning modes (concrete, conceptualisation, reflection, and experiment) for knowledge acquisition, and these modes should be considered in entrepreneurship education. The ability to think about new ideas and activities as presented in Table 6.6 suggested that 44.7% strongly agreed, 42.2% agreed and 8.3% slightly agreed. Therefore, 95.2% of the students believed that they have the ability of developing innovative idea. A total of 52.6% of the students strongly agreed, 39.4% agreed and 2.8 slightly agreed that they like to try new things. This implies that 92% of the exit level students will be interested in starting a new business through innovative idea. This result is not surprising as innovative idea has been identified to be the key factor of entrepreneurship or business start-ups (Schumpeter, 1934). Shane (2012) opined that innovative idea is an essential characteristic of entrepreneurship. Okurumeh (2013) added that innovative skills are determinants of self-employment.

The next table below represents the views of the students on their proactivity skills as shown in Table 6.7

Table 6. 7: Responses on proactive skills

PROACTIVENESS								
		Strongly disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
1.12	I prefer to step-up and get things done myself rather than waiting for someone else to do it	8 (2.8%)	9 (3.1%)	10 (3.5%)	11 (3.8%)	119 (41.2%)	132 (45.6)	289
1.13	I tend to plan ahead on projects	5 (1.7%)	3 (1.0%)	7 (2.4%)	24 (8.3%)	137 (47.4%)	113 (39.1%)	289
1.14	I usually look ahead to identify problems and needs so that I can deal with them before they happen	5 (1.7%)	8 (2.8%)	8 (2.8%)	42 (14.6%)	126 (43.8%)	99 (34.3%)	288
1.15	I am always looking for better ways to do things	3 (1.0%)	3 (1.0%)	3 (1.0%)	16 (5.5%)	124 (42.9%)	140 (48.4%)	289

Source: Author's compilation

As shown in Table 6.7, the personal initiatives to get things done without waiting for others to do it revealed that 45.7% were in strong agreement, 41.2% agreed and 3.8% slightly agreed. A total of 90.7% believed that students can act ahead of others in getting things done. In terms of planning ahead on projects, 39.1% were in strong agreement, 47.4% agreed and 8.3% slightly agreed. 34.3% strongly perceived that students can usually anticipate problems and needs so that they can deal with them before they occur. While 43.6% agreed, 14.5% of the students were in slight agreement. On the perception to do things in a better way, 48.4% strongly agreed,

42.9% agreed and 5.5% showed slight agreement. This report indicated that after three years exposure to entrepreneurship training, 96.8% of the exit level students have the proactive skills to compete in an existing or new market. This report is similar to the study conducted by Gao, Ge, Lang and Xu (2017) on new 235 ventures in China. The authors found that there is positive association between proactive orientation and entrepreneurial performance, which is also positively moderated by competitive strategy. This result is also affirmed by Renko *et al.* (2011), in which the authors mentioned that proactive skills allow for the establishment of an uncertain startup, and predict future opportunities.

The next presentations depict the participants responses on entrepreneurial self-efficacy sub-constructs from Table 6.8 to 6.11

Table 6. 8: ESE Searching

		Strongly Disagree	Disagree	Slightly disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
	BUSINESS SEARCHING SELF-EFFICACY							
2.1	I am confident that I have the ability to identify a good business opportunity in my environment	7 (2.4%)	11 (3.8%)	10 (3.5%)	26 (9.0%)	137 (47.4%)	98 (33.9%)	289
2.2	I am confident that I have the ability to identify the need for new products or services	10 (3.5%)	5 (1.7%)	10 (3.5%)	35 (12.1%)	148 (51.2%)	81 (28.0%)	289
2.3	I am confident that I have the ability to identify a new product in order to satisfy customers' needs	4 (1.4%)	7 (2.4%)	9 (3.1%)	30 (10.4%)	126 (43.6%)	113 (39.1%)	289
2.4	I am confident that I have the ability to come up with a new idea for a product or service	3 (1.0%)	10 (3.5%)	9 (3.1%)	20 (6.9%)6	137 (47.6%)	109 (37.9%)	288
2.5	I am confident that I have the ability to identify business opportunity from people's needs	4 (1.4%)	6 (2.1%)	10 (3.5%)	41 (14.2%)	155 (53.6%)	73 (25.3%)	289

Source: Author's compilation

The students' responses on ESE business searching as presented in Table 6.8 revealed that 33.9% of the students strongly agreed, 47.4% agreed and 9% slightly agreed that students have ability to identify a good business opportunity in their environment. This report is in line with the findings of Nowiński, *et al.* (2019). The authors found that students from four countries showed increased ESE searching after being exposed to entrepreneurship training. In identifying the need for new products or services, 28% of the students were in strong agreement, 51.2% confidently agreed and 12.1% slightly agreed. Table 6.8 also revealed a

strong agreement of 39.1%, 43% agreement and 10.4% slightly agreement on confidence to identify new product in order to satisfy customers' needs. The ability to come up with an idea of developing a new product or service showed that 37.7% of the students strongly agreed, 47.4% agreed, and 6.9% were in slight agreement. A total of 7.6% were not in agreement. The students' ability to identify business opportunities from peoples' needs demonstrated 25% strong agreement, 56.3% agreement and 14.2% of the students showed slight agreement. However, 1.4% strongly disagreed, 2.1% disagreed and 3.5% slightly disagreed. Overall, it is safe to say that about 90% of the exit level students possess the ability to identify business opportunities having undergone three years of entrepreneurship education. In testing students' ability on identification of business opportunities, Karimi, Biemans, Lans, Aazami and Mulder (2014) demonstrated a pre-vs post-test experiment on undergraduate students from Iran. The study indicated that there is a significant impact on the ability to generate innovative business idea from the experiment group with additional entrepreneurship course than the control group. Similarly, Olugbola (2017) and Nchu *et al.* (2017) empirically found increased entrepreneurial readiness toward identification of business opportunities among students after being exposed to entrepreneurship trainings.

Table 6.9 below presents the ESE planning phase of developing business plans or proposals.

Table 6. 9: ESE planning

BUSINESS PLANNING SELF-EFFICACY								
		Strongly Disagree	Disagree	Slightly disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
2.6	I am confident that I can develop my idea into a business plan	7 (2.4%)	8 (2.8%)	8 (2.8%)	28 (9.7%)	142 (49.1%)	96 (33.2%)	289
2.7	I am confident that I have the ability to design an effective marketing/advertising strategy for a new product or service	6 (2.1%)	16 (5.5%)	14 (4.9%)	43 (14.9%)	129 (44.8%)	80 (27.8%)	288
2.8	I am confident that I have the ability to determine the right workers and environment for my business idea.	3 (1.0%)	9 (3.1%)	9 (3.1%)	41 (14.2%)	133 (46.1%)	94 (32.5%)	289
2.9	I am confident I have the ability to clearly explain my business plan both in writing and verbally	5 (1.7%)	11 (3.8%)	6 (2.1%)	49 (17.0%)	132 (45.9%)	85 (29.5%)	288

Source: Author's compilation

As presented in Table 6.9, the development of ideas into business plans showed that most of the students were in agreement 49.1%, 33.2% of them showed a strong agreement, and 9.7%

slightly agreed. Students that were in disagreement 2.8%, and those that slightly disagreed 2.8% were of the same number. Further, 2.4% lacked the confidence to develop a business plan. A total of 87% were confident to design an effective marketing strategy for a new product or service, while 13% were not in agreement or not confident enough. The confidence to determine the right employees and business location for an idea also revealed that majority 46.0% of the students possess the ability, while some students disagreed 3.1%, others strongly disagreed and slightly disagreed 1.0% 3.1% respectively. The response on clear communication of a business plan verbally and in writing suggest that most of the students 45.7% possess the ability and 29.4% strongly believed that students are confident enough. While 17% slightly agreed, 2.1% slightly disagreed, 3.8% disagreed, and 1.7% strongly disagreed that they have the confidence to communicate a business plan. This study found that about 86% of the respondents have the ability to develop and translate business ideas into business plans after three years of entrepreneurship training.

This finding buttressed the report of Nowiński, *et al.,* (2019) on undergraduate students from Czech Republic, Denmark, Finland and Hungry. The authors found that entrepreneurship education significantly influence ESE planning. Entrepreneurship education was found to significantly increase the ability to transform business idea into business proposal. In the same vein, Goic and Muller (2003) found that entrepreneurship education significantly impacts university students' ability to develop business plans and translate it to venture creation.

The next phase of business venture is regarded as ESE marshaling as presented in Table 6.10 below.

Table 6. 10: ESE marshalling

MARSHALLING SELF-EFFICACY								
		Strongly Disagree	Disagree	Slightly disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
2.10	I am confident I have the ability to influence people to believe in my new business	9 (3.1%)	5 (1.7%)	9 (3.1%)	33 (11.6%)	140 (48 6%)	92 (31.9%)	288
2.11	I am confident that I have the ability to raise money to start a business	4 (1.4%)	7 (2.4%)	11 (3.8%)	38 (13.2%)	112 (39%)	115 (40.2%)	287
2.12	I am confident that I can convince people to make financial contributions towards starting my business	13 (4.6%)	7 (2.4%)	12 (4.2%)	52 (18.2%)	115 (40.2%)	87 (30.4%)	286
2.13	I am confident that I have the ability to motivate people to partner with me	10 (3.5%)	10 (3.5%)	13 (4.5%)	38 (13.2%)	131 (45.3%)	87 (30.1%)	289
2.14	I am confident that I have the ability to convince people to commit their time and energy to my business	8 (2.8%)	13 (4.5%)	17 (5.9%)	58 (20.1%)	122 (42.4%)	70 (24.3%)	288

Source: Author's compilation

Table 6.10 presents the business marshaling phase to determine the students' ability to gather economic resources. About 31.8% strongly agreed, 48.8% agreed and 11.4% slightly agreed that students possess the ability to influence people to believe in their new business. The report suggests that 92.6% of the respondents were confident of influencing people to believe in their business idea. An estimate of 39.8% were in strong agreement, 38.8% agreed and 13.1% slightly agreed that they possess the ability to raise money to start a new business. As a result, about 92% of the students were confident enough to possess the ability to gather economic resources for a new business venture. In terms of convincing people to make financial contributions towards starting a business, 30.1% strongly agreed, 39.8% agreed and 18.0% slightly agreed that students possess the ability to convince people to make financial contributions towards establishing their own business. This indicated that about 80.7% of the students were confident of influencing other people to commit financial contributions towards starting their personal business.

Further, 30.1% strongly agreed, 45.3% agreed and 13.1% slightly agreed on the confidence towards motivating people to become business partners. This study found that 88.5% opined that students have the confidence to motivate business people to become business partners. Additionally, the students' perception of convincing people to commit time and energy to personal business as revealed in Table 6.10, shows that 24.2% strongly agreed, 42.2% agreed

and 20.1% slightly agreed. These results indicated that after three years of entrepreneurship exposure, 86.5% of the students possess the ability to gather (marshall) economic resources for business start-ups. This finding is also affirmed by the empirical report of Nowiński, *et al.,* (2019) in which entrepreneurship education positively influence ESE marshalling. Other outcomes on the impact of entrepreneurship education towards business motivation have also been documented (Sanchez, 2013; Abid *et al.,* 2015).

Table 6.11 depict the students' responses on ESE implementing as shown in the table below

Table 6. 11: ESE Implementing

IMPLEMENTING SELF-EFFICACY								
		Strongly Disagree	Disagree	Slightly disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
2.15	I am confident I have the ability to start a small business with limited resources	7 (2.4%)	8 (2.8%)	7 (2.4%)	45 (15.6%)	134 (46.4%)	88 (30.4%)	289
2.16	I am confident I have the ability to manage my financial resources	3 (1.0%)	10 (3.5%)	7 (2.4%)	26 (9.0%)	130 (45.0%)	113 (39.1%)	289
2.17	I am confident that I can satisfy my customers by addressing their needs	10 (3.5%)	2 (0.7%)	10 (3.5%)	33 (11.4%)	125 (43.2%)	109 (37.7%)	289
2.18	I am confident I have the ability to sustain my business for more than 5 years	7 (2.4%)	8 (2.8%)	17 (5.9%)	31 (10.7%)	105 (36.3%)	121 (41.9%)	289
2.19	I am confident that I have the ability to use new technology that will make my business competitive	9 (3.1%)	7 (2.4%)	4 (1.4%)	29 (10.0%)	135 (46.7%)	105 (36.3%)	289
2.20	I am confident that I have the ability to deal effectively with day-to-day problems and crises	9 (3.1%)	14 (4.9%)	10 (3.5%)	49 (17.0%)	129 (45.0%)	76 (26.5%)	287
2.21	I am confident that I have the ability to face challenges I come across in my business	9 (3.1%)	8 (2.8%)	11 (3.8%)	36 (12.5%)	129 (44.6%)	96 (33.2%)	289
2.22	I am confident I have the ability to make my unique idea a reality	9 (3.1%)	11 (3.8%)	6 (2.1%)	33 (11.5%)	131 (45.5%)	98 (34.0%)	288

Source: Author's compilation

From Table 6.11 above, 92.4% of the students agreed that they are confident of starting a business with limited resources, while 7.6% will not be able to start a business with limited resources. A total of 93.1% believed that students have financial management ability, but 6.9% disagreed. In terms of the ability to satisfy customers by meeting their needs, 37.7% strongly agreed, 43.3% agreed, and 11.4% slightly agreed. This means, about 90% of the students were confident of satisfying customers' needs. Students' responses on business sustainability

beyond five years revealed that, 11.1% do not possess the ability, while 88.9% agreed that students have the ability to sustain their business beyond five years. According to Table 6.11, the introduction of new technology to gain competitive advantage suggests that about 6.9% of the students disagreed, while 93.1% agreed to be confident in the use of new technology for competitive edge. This high response rate of agreement may be influenced by the students' technical and vocational skills. Further, 88.6% of the students agreed, but 11.4 disagreed that students are confident of having the ability to deal with daily problems and challenges. Also, 9.7% disagreed on having the ability to face business challenges, while 90.3% were in agreement of having the ability to face business challenges. The perception on making a unique idea a reality showed that about 9% of the students lack the ability to realise a unique idea. However, 91% agreed students can transform a unique idea into reality. The findings from Table 6.11 indicated that about 90% of the exit level students have the confidence to initiate a new venture as a result of entrepreneurship exposure. This outcome supports the finding of Purwana and Suhud (2017) on 628 vocational students from Indonesia. The scholars found that entrepreneurship education motivates students towards entrepreneurial activities. Similar outcome has been discovered among TVET students in Malaysia (Pihie & Bagheri, 2011), and China (Tang *et al.,* 2014).

The table below depicts the students' responses on technical entrepreneurial skills such as communication skills, problem-solving skills, and organising skills. Technical skill is one of the sub-constructs of entrepreneurship education.

Table 6. 12: Technical Skills

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
	TECHNICAL SKILLS							
3.1	I can communicate my views with fluency in English	8 (2.8%)	9 (3.1%)	11 (3.8%)	20 (7.1%)	139 (48.4%)	100 (34.8%)	287
3.2	I find it easy to listen and understand what others are saying	6 (2.1%)	21 (7.3%)	9 (3.1%)	24 (8.3%)	134 (46.4%)	95 (32.9%)	289
3.3	I can use technology effectively to communicate with others	5 (1.7%)	16 (5.5%)	7 (2.4%)	35 (12.1%)	121 (41.9%)	105 (36.3%)	289
3.4	I find it easy to confront other peoples' problems and resolve them	12 (4.2%)	13 (4.5%)	17 (5.9%)	45 (15.6%)	122 (42.4%)	79 (27.4%)	288
3.5	I can write my ideas and opinions clearly to convince my audience	7 (2.4%)	9 (3.1%)	10 (3.5%)	43 (14.8%)	144 (49.9%)	76 (26.3%)	289
3.6	I find it easy to make clear and concise presentations to others	5 (1.7%)	8 (2.8%)	14 (4.9%)	41 (14.3%)	138 (48.1%)	81 (28.2%)	287
3.7	I try to find the real cause of problems before taking action	7 (2.4%)	5 (1.7%)	12 (4.2%)	43 (14.9%)	127 (43.9%)	95 (32.9%)	289
3.8	I can think in a logical manner when approaching and solving problems	7 (2.4%)	13 (4.5%)	16 (5.5%)	38 (13.2%)	131 (45.3%)	84 (29.1%)	289
3.9	I am able to look at the big picture when approaching a problem that needs solving	4 (1.4%)	11 (3.8%)	8 (2.8%)	58 (20.0%)	133 (46.0%)	75 (26.0%)	289
3.10	I can ask questions and look for further information to give me a better understanding of a problem	9 (3.1%)	2 (0.7%)	9 (3.1%)	21 (7.3%)	124 (42.9%)	124 (42.9%)	289

Source: Author's compilation

The responses from Table 6.12 show that 90.3% of the students can express their views fluently in English Language, while 9.7% disagreed. 87.5% of the students agreed to have easy understanding from listening to other people, but 12.5% disagreed. While 90.4% opined that students can use technology to communicate effectively with other people, 9.6% disagreed. Also, 75.4% agreed that they have the ability to confront other peoples' problems and resolve them, but 14.6% of the students disagreed to finding solutions to other peoples' problems. Table 6.12 also reveals that 10% of the respondents were not able to write their ideas and opinions clearly to convince their audience, while 90% agreed with the perception. In terms of making clear and concise presentations for communicating to other people, 90.7% agreed with the assertion, but 9.3% disagreed. Also, 91.7% of the students prefer to identify a problem before taking action, but 8.3% do not agree with this. A total of 87.9% opined that students can use logical reasoning to solve a problem, while 12.1% said otherwise. Further, 8% of the

students are not able to adopt wholistic approach to solve a problem, while 92% of the students agreed to approach a problem from the big picture. 93.1% of the students agreed to understand the cause of a problem through questioning and assessing additional information, while 6.9% thought otherwise. The general findings from Table 6.12 suggests that about 85% of the exit level students possess technical entrepreneurial skills to engage in a new start-up. Scholarly works have demonstrated that technical skills are key components of new business start-ups (Henry *et al.,* 2005; Martin & Brown, 2013; Almarhea & Sarea, 2018).

The students' perception on business management skills is presented in Table 6.13 below. Business management includes decision-making skills, financial skills, marketing skills, human resource skills, customer relation skills etc.

Table 6. 13 Business Management Skills

BUSINESS MANAGEMENT SKILLS								
		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
3.11	I can make quick but clear decisions to encourage others into action	10 (3.5%)	10 (3.5%)	8 (2.8%)	31 (10.7%)	142 (49.1%)	88 (30.4%)	289
3.12	I take responsibility for decisions I make and actions I take	3 (1.0%)	14 (4.8%)	6 (2.1%)	37 (12.8%)	135 (46.7%)	94 (32.5%)	289
3.13	I can easily get information to help me make decisions	8 (2.8%)	5 (1.7%)	15 (5.2%)	22 (7.6%)	127 (43.9%)	112 (38.8%)	289
3.14	I usually set achievable/realistic targets	7 (2.4%)	4 (1.4%)	12 (4.2%)	41 (14.3%)	134 (46.7%)	89 (31.0%)	287
3.15	I develop plans for specific goals and tasks	11 (3.8%)	10 (3.5%)	9 (3.1%)	32 (11.2%)	128 (44.8%)	96 (33.6%)	286
3.16	I consider a wide range of alternatives before making a decision	6 (2.1%)	9 (3.1%)	11 (3.8%)	44 (15.2%)	145 (50.2%)	74 (25.6%)	289
3.17	I am able to set a budget	3 (1.0%)	9 (3.1%)	7 (2.4%)	41 (13.1%)	120 (41.5%)	109 (37.7%)	289
3.18	I am able to keep financial records	3 (1.0%)	12 (4.2%)	15 (5.2%)	44 (15.3%)	121 (42.2%)	92 (32.1%)	287
3.19	I am able to communicate with business partners from other countries	4 (1.4%)	8 (2.8%)	8 (2.8%)	48 (16.6%)	120 (41.5%)	101 (34.9%)	289
3.20	I am able to understand the value of Naira for foreign exchange	12 (4.2%)	6 (2.1%)	9 (3.1%)	44 (15.3%)	121 (42.0%)	96 (33.3%)	288
3.21	I have sound financial awareness	8 (2.8%)	5 (1.7%)	15 (5.2%)	46 (15.9%)	136 (47.1%)	79 (27.3%)	289

Source: Author's compilation

In Table 6.13, respondents' opinion on business management skills revealed that 30.4% strongly agreed, 49.1% agreed and 10.4% slightly agreed that students can make quick but

clear decisions to encourage others into action. About 92.1% of the respondents agreed, while 7.9% disagreed that students can take responsibility for the decisions made and actions taken. About 90% agreed and 10% disagreed that students have easy access to information to help make decisions. A total of 92% agreed while 8% disagreed that students have the ability to set achievable and realistic goals. Table 6.13 reflects that 89.6% of the respondents agreed while 10.4% disagreed that students can develop plans for specific goals. The respondents' opinion on considering various alternatives before making decisions suggested that 91% respondents agreed while 9% disagreed. The ability to set a business budget was affirmed by 93.5% students, but 6.5% students disagreed to having the ability to set a budget. While 89.6% of the respondents agreed, 10.4% disagreed that students have the ability to keep financial records. In terms of students' ability to communicate with business partners from other countries, 93% of the respondents agreed while 7% disagreed to possess such ability. About 33.2% strongly agreed, 41.9% agreed while 14.9% slightly agreed that students were able to understand the value of Naira to other countries' currencies. The report on sound financial awareness revealed that 27.3% strongly agreed, 47.1% agreed and 14.9% slightly agreed that students have sound financial awareness. Thus, 89.3% of the exit level students showed business management ability to grow and sustain a start-up. This result buttressed the findings of Elmuti *et al.* (2012) and Martins and Pear (2015), in which the authors found that business management skills significantly influence entrepreneurial performance.

The respondents' opinion in Table 6.14 below depicts valid information on personal entrepreneurial skills. Personal entrepreneurial skills include: innovative skills, persistence, risk-taking, and personal initiative skills.

Table 6. 14: Personal Entrepreneurial Skills

	PERSONAL ENTREPRENEURIAL SKILLS							
		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
3.22	I prefer to work under my own direction	10 (3.5%)	8 (2.8%)	11 (3.8%)	32 (11.0%)	129 (44.6%)	99 (34.3%)	289
3.23	I can identify business opportunities online for myself and my community	5 (1.7%)	8 (2.8%)	10 (3.5%)	46 (15.9%)	130 (45.0%)	90 (31.1%)	289
3.24	I can search for business information on the internet.	4 (1.4%)	7 (2.4%)	11 (3.8%)	41 (14.2%)	134 (46.4%)	92 (31.8%)	289
3.25	I can sell or market products through the social media.	7 (2.4%)	7 (2.4%)	16 (5.5%)	47 (16.3%)	126 (43.6%)	86 (29.8%)	289
3.26	When I see something needs doing, I do it without being asked	7 (2.4%)	11 (3.8%)	16 (5.6%)	39 (13.7%)	121 (42.3%)	92 (32.2%)	286
3.27	I find it easy to convince people to accept an idea or buy a product	8 (2.8%)	6 (2.1%)	13 (4.5%)	46 (16.0%)	127 (44.1%)	88 (30.5%)	288
3.28	Being the best in the field is very important to me	2 (0.7%)	7 (2.4%)	9 (3.1%)	36 (12.5%)	126 (43.6%)	109 (37.7%)	289
3.29	I can adapt easily to new situations	7 (2.4%)	12 (4.2%)	10 (3.5%)	48 (16.6%)	139 (48.0%)	73 (25.3%)	289
3.30	I have open and friendly approach towards people	2 (0.7%)	13 (4.5%)	9 (3.1%)	44 (15.4%)	117 (40.9%)	101 (35.3%)	286
3.31	I find it easy to develop relationships with people	7 (2.4%)	7 (2.4%)	8 (2.8%)	41 (14.2%)	113 (39.3%)	112 (38.9%)	288
3.32	I can easily direct people and motivate them	5 (1.7%)	6 (2.1%)	11 (3.8%)	31 (10.7%)	136 (47.1%)	100 (34.6%)	289

Source: Author's compilation

As shown in Table 6.14, 94.9% of the respondents agreed while 4.1% disagreed that students prefer to work as a boss of their own. Also, 92% of the respondents agreed while 8% disagreed that students can personally identify business opportunities online and for their community. While 92.4% were with agreement, 7.6% of the respondents disagreed that students can search for business information on the internet. Responses in Table 6.14 also revealed that 89.7% agreed while 10.3% disagreed that students can sell or market products on social media platforms. Results from the table found that 88.3% of the respondents agreed while 11.7% disagreed that students can get things done without being asked if need be. Further, 9.3% disagreed but 90.7% were with agreement that students find it easy to convince other people to accept an idea or buy a product. While 6.2% disagreed, 93.8% agreed that being the best in their field of profession is of importance. 10.1% also disagreed while 89.9% agreed that students can easily adapt to new situations. On the basis of relationship, 8.3% of the respondents disagreed while 91.7% agreed that students have open and friendly approach towards people. In the same vein, 7.6% disagreed while 92.4% agreed that students find it easy

to relate with people. While 34.6% strongly agreed, 47.1% agreed and 10% slightly agreed that students can easily direct and motivate people. This study found that about 85% of the respondents possess personal initiative or personal entrepreneurial skills to manage people and business resources towards initiating a new business (Henry *et al.*, 2005; Almahry & Sarea, 2018).

The report in Table 6.15 below presents the responses on entrepreneurial readiness towards business creation. The items were modified in line with entrepreneurial readiness in technical and vocational skills, as a result of future computerisation of jobs.

Table 6. 15 Entrepreneurial readiness

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Total (n)
4.1	I believe I have the technical skills needed to run a business in the 21st century	11 (3.9%)	7 (2.4%)	7 (2.4%)	36 (12.6%)	130 (45.5%)	95 (33.2%)	286
4.2	I can improve on an existing technology by creating a better version to satisfy peoples' needs	5 (1.7%)	15 (5.2%)	4 (1.4%)	43 (15.0%)	124 (43.2%)	96 (33.5%)	287
4.3	I am able to use the latest windows version on the computer	3 (1.0%)	11 (3.8%)	11 (3.8%)	55 (19.2%)	126 (44.1%)	80 (28.0%)	286
4.4	If I fail at something, I have the ability and endurance to try again until I get a result	6 (2.1%)	9 (3.1%)	9 (3.1%)	25 (8.7%)	121 (42.0%)	118 (41.0%)	288
4.5	I am able to browse the internet for business solutions	3 (1.0%)	6 (2.1%)	8 (2.8%)	42 (14.5%)	121 (41.9%)	109 (37.7%)	289
4.6	I know how to complete 'business' transactions online using my mobile phone e.g. sales	10 (3.5%)	8 (2.8%)	11 (3.8%)	52 (18.0%)	124 (42.8%)	84 (29.1%)	289
4.7	I am able to advertise any product or service through the social media.	6 (2.1%)	11 (3.8%)	5 (1.7%)	52 (18.1%)	114 (39.6%)	100 (34.7%)	288
4.8	I am able to do online banking e.g. money transfers, using my mobile phone	4 (1.4%)	14 (4.8%)	12 (4.2%)	49 (17.0%)	120 (41.5%)	90 (31.1%)	289
4.9	I am able to set up and use a spreadsheet on the computer to do mathematical calculations	6 (2.1%)	12 (4.2%)	19 (6.6%)	59 (20.3%)	108 (37.4%)	85 (29.4%)	289
4.10	I am able to identify and protect my business against any online fraud activities	5 (1.7%)	7 (2.4%)	15 (5.2%)	56 (19.4%)	123 (42.6%)	83 (28.7%)	289
4.11	I am able to do graphic designs on the computer	11 (3.8%)	18 (6.2%)	10 (3.5%)	49 (17.1%)	106 (37.0%)	93 (32.4%)	287
4.12	I can cope with multiple demands on me at the same time	15 (5.2%)	8 (2.8%)	16 (5.5%)	58 (20.1%)	122 (42.4%)	69 (24.0%)	288
4.13	I am able to use computer software that applies to my technical field	9 (3.1%)	10 (3.5%)	5 (1.7%)	31 (10.7%)	127 (43.9%)	107 (37.1%)	289

Source: Author's compilation

The respondents' perceptions in Table 6.15 indicated that 91.3% agreed while 8.7% disagreed that students have the technical skills needed to run a business in the 21st century. While 91.7% of the respondents agreed, 8.3% disagreed that students can improve on an existing technology by creating a better version to satisfy peoples' needs. A total of 91.4% of the respondents agreed

while 8.6% disagreed that students can use the latest version of windows on the computer. In terms of having a resilience spirit, a total of 8.3% of the respondents disagreed while 91.7% agreed that students have the ability and endurance to try again after failing at something until an achievement is made. Also, 94.1% of the respondents agreed, but 5.9% disagreed that students have the ability to browse the internet for business solutions. Similarly, 89.9% agreed while 10.1% disagreed that students can complete business transactions online through a mobile phone. Further, 95.4% agreed, while 4.6% of the respondents disagreed that students have the ability to advertise any product or service on the social media platforms. About 89.6% of the respondents agreed, while 10.4% disagreed that students have the ability to do online banking using the mobile phone. While 12.9% of the respondents disagreed, 87.1% agreed that students have the ability to do mathematical calculations using the spreadsheet on the computer. Additionally, 9.3% of the valid responses disagreed, while 90.7% agreed that students can identify and protect their businesses against online fraud activities. In another computer related ability, 86.5% of the respondents agreed but 13.5% disagreed that students can do graphic design on the computer. While 13.5% disagreed, 86.5% of the respondents agreed that students can cope with multiple demands at the same time. Lastly, 91.7% of the respondents agreed, while 8.3% were in disagreement that students are able to use the computer software that applies to their specific fields. This result suggests that entrepreneurship training at the selected TVET institution impact about 85% of the exit level students towards entrepreneurial readiness for venture creation. This outcome supports the findings of Nchu *et al.* (2017), in which the authors note that 73% of South African high school learners showed entrepreneurial readiness with the view of starting a business through knowledge and skills gained in the entrepreneurship education. Additionally, Harivanto *et al.* (2017) found increased entrepreneurial readiness among Vocational High School students after attending integrated learning process.

Tables 6.5 to 6.15 reveal the responses of the participants to all the items used in measuring the eleven sub-constructs in this study.

6.5 Analysis of scales

6.5.1 Analysis of scale for entrepreneurship education

The Kaiser-Meyer-Olkin (KMO) measures for the three scales were all greater than the recommended 0.5, which means that the sample from which these data were collected was

adequate. Additionally, Bartlett's test of sphericity indicated a statistically significant result ($p<0.05$). Therefore, the measure of sampling adequacy (MSA) is satisfactory. All the items were retained because they produced factor loading values higher than 0.40. The Cronbach alpha values ranged between 0.872 to 0.897, and as a result the four constructs surpassed the recommended threshold of 0.7. The item-to-total correlations for each of the three scales were higher than the minimum recommended 0.30, which means the scales meet the minimum criteria for acceptability.

Table 6. 16: Factor Analysis for Technical skills

Item-total-correlations		
ETECH 1		0.613
ETECH 2		0.593
ETECH 3		0.610
ETECH 4		0.478
ETECH 5		0.673
ETECH 6		0.547
ETECH 7		0.647
ETECH 8		0.620
ETECH 9		0.567
ETECH 10		0.571
KMO	0.903	
Bartlett's Test	P<0.05	
Cronbach α	0.872	

Table 6. 17: Factor Analysis for Business management skills

Item-total-correlations		
EBMS 1		0.599
EBMS 2		0.685
EBMS 3		0.640
EBMS 4		0.547
EBMS 5		0.681
EBMS 6		0.724
EBMS 7		0.639
EBMS 8		0.611
EBMS 9		0.602
EBMS 10		0.632
EBMS 11		0.537
KMO	0.903	
Bartlett's Test	P<0.05	
Cronbach α	0.897	

Table 6. 18: Factor Analysis for Personal entrepreneurial skills

Item-total-correlations	
EPRS 1	0.558
EPRS 2	0.661
EPRS 3	0.682
EPRS 4	0.608
EPRS 5	0.569
EPRS 6	0.622
EPRS 7	0.601
EPRS 8	0.611
EPRS 9	0.640
EPRS 10	0.670
EPRS 11	0.662
KMO	0.926
Bartlett's Test	P<0.05
Cronbach α	0.896

Source: Author's compilation

The composition in Table 6.16 shows the KMO for the scale Entrepreneurship Technical Skills (ETECH) at 0.903, Bartlett's test $p<0.05$ and Cronbach α 0.872. Also, Table 6.17 depicts Entrepreneurship Business Management Skills (EBMS) values, where KMO is 0.926, Bartlett's test $p<0.05$, and Cronbach α 0.897. In similar vein, Table 6.18 shows that Entrepreneurship Personal Skills (EPRS) scale has KMO of 0.926, Bartlett's test $p<0.05$, and Cronbach α 0.896.

6.5.2 Scale analysis for entrepreneurial self-efficacy (ESE)

For the ESE scale, the Kaiser-Meyer-Olkin measures for the four scales were all greater than the recommended 0.5, this means that the sample from which these data were collected was adequate. Additionally, Bartlett's test of sphericity indicated a statistically significant result ($p<0.05$). Therefore, the measure of sampling adequacy (MSA) is satisfactory. Only item 4 for the scale 'IMPLEMENTING' was dropped because it had insignificant loading, that is, it produced factor loading values less than 0.40. The Cronbach alpha values ranged between 0.731 to 0.837, and as a result the four constructs surpassed the recommended threshold of 0.7. The item-to-total correlations for each of the four scales were higher than the minimum 0.30, which means the scales meet the minimum criteria for acceptability.

Table 6. 19: Factor Analysis for ESE business searching

Item-total-correlations		
ESEBUS 1		0.678
ESEBUS 2		0.629
ESEBUS 3		0.659
ESEBUS 4		0.608
ESEBUS 5		0.580
KMO	0.816	
Bartlett's Test	P<0.05	
Cronbach α	0.831	

Table 6. 20: Factor Analysis for ESE business planning

Item-total-correlations		
ESEPLN 1		0.472
ESEPLN 2		0.516
ESEPLN 3		0.609
ESEPLN 4		0.498
KMO	0.731	
Bartlett's Test	P<0.05	
Cronbach α	0.731	

Table 6. 21: Factor Analysis for ESE business marshalling

Item-total-correlations		
ESEMSH 1		0.549
ESEMSH 2		0.609
ESEMSH 3		0.605
ESEMSH 4		0.546
ESEMSH 5		0.575
KMO	0.801	
Bartlett's Test	P<0.05	
Cronbach α	0.796	

Table 6. 22: Factor Analysis for ESE business implementing

Item-total-correlations		
ESEIMP 1		0.593
ESEIMP 2		0.613
ESEIMP 3		0.584
ESEIMP 5		0.582
ESEIMP 6		0.529
ESEIMP 7		0.597
ESEIMP 8		0.624
KMO	0.874	
Bartlett's Test	P<0.05	
Cronbach α	0.837	

Source: Author's compilation

Tables 6.19 to 6.22 illustrate sampling adequacy measures and Cronbach Alpha values for ESE. For ESE Business Searching (ESEBUS), KMO = 0.816, Bartlett's test is significant at $p<0.05$,

and Cronbach Alpha= 0.831. For ESE Business Planning (ESEPLN), KMO= 0.739, Bartlett's test= $p<0.05$, Cronbach Alpha= 0.731. ESE Business Marshalling (ESEMSH), KMO= 0.801, Bartlett's test= $p<0.05$ and Cronbach Alpha= 0.796. and ESE Business Implementing, KMO= 0.874, Bartlett's test= $p<0.05$, and Cronbach Alpha= 0.837. All items-to-total correlations for the four scales (ESEBUS; ESEPLN; ESEMSH; and ESEIMP) were all greater than the minimum requirement of 0.3 threshold and were all retained except for item 4 from the scale 'ESEIMP' with a value less than 0.4 was deleted.

6.5.3 Scale analysis for individual entrepreneurial orientation (IEO) propensities

For the IEO scale, the Kaiser-Meyer-Olkin test of measures were all greater than the recommended 0.5 which means that the sample from which these data were collected was adequate. Additionally, Bartlett's test of sphericity indicated a statistically significant result ($p<0.05$). Therefore, the measure of sampling adequacy (MSA) is satisfactory. All the items were retained because they produced factor loading values higher than 0.40. The scale for risk-taking produced a Cronbach alpha value of 0.767, and KMO 0.793. The scale for innovativeness had a Cronbach alpha value of 0.762, and KMO 0.817 while proactiveness had a Cronbach alpha value of 0.784, KMO 0.756, and as a result, surpassed the recommended threshold of 0.7 for Cronbach alpha and 0.5 for KMO. All the items in the three scales had their respective item-to-total correlations higher than the minimum 0.30.

Table 6. 23: Factor Analysis for Risk-taking

Item-total-correlations		
Risk-taking 1		0.516
Risk-taking 2		0.646
Risk-taking 3		0.481
Risk-taking 4		0.556
Risk-taking 5		0.495
KMO	0.793	
Bartlett's Test	P<0.05	
Cronbach α 7	0.76	

Table 6. 24: Factor Analysis for Innovation

Item-total-correlations		
Innovation 1		0.551
Innovation 2		0.455
Innovation 3		0.562
Innovation 4		0.442
Innovation 5		0.460
Innovation 6		0.585
KMO	0.817	
Bartlett's Test	P<0.05	
Cronbach α	0.762	

Table 6. 25: Factor Analysis for Proactivity

Item-total-correlations		
Proactiveness 1		0.637
Proactiveness 2		0.588
Proactiveness 3		0.612
Proactiveness 4		0.541
KMO	0.756	
Bartlett's Test	P<0.05	
Cronbach α	0.784	

Source: Author's compilation

Tables 6.23 to 6.25 above reveal the item-to-total correlations for the IEO scale which comprise three sub constructs. The item-to-total correlations from the scale were all greater than the minimum recommendation of 0.3 threshold.

6.5.4 Analysis of scale for entrepreneurial readiness

As composed in Table 6.26, the analysis of scale for entrepreneurial readiness (ENTR) shows the Kaiser-Meyer-Olkin measure of 0.922 (above 0.5), which means that the sample from which these data were collected was adequate. Additionally, Bartlett's test of sphericity indicated a statistically significant result ($p<0.05$). Therefore, the measure of sampling adequacy (MSA) is satisfactory. Only item 1 was dropped because it had insignificant loading,

that is, it produced factor loading values less than 0.40. The Cronbach's alpha for the scale was 0.902. All the item-to-total correlations were higher than 0.30 which means the scale meet the minimum criteria for reliability. These results were presented in Table 6.26 below.

Table 6. 26: Factor analysis for entrepreneurial readiness

Item-total-correlations		
ENTR 2		0.667
ENTR 3		0.658
ENTR 4		0.580
ENTR 5		0.629
ENTR 6		0.625
ENTR 7		0.656
ENTR 8		0.654
ENTR 9		0.620
ENTR 10		0.652
ENTR 11		0.526
ENTR 12		0.618
ENTR 13		0.623
KMO	0.922	
Bartlett's Test	P<0.05	
Cronbach α	0.902	

Source: Author's compilation

Table 6.26 presents the corrected item-total correlation for ENTR. All the items in the scale indicate values greater than the minimum recommended value of 0.3 except for item 1 which produced insignificant loading and was deleted. Other items in the scale meet the minimum criteria for reliability.

Table 6. 27: Anti-Image Correlation of Scales

Anti-Image Correlation											
RISK	952[a]										
INVT	-0.133	940[a]									
PRCTV	-0.199	-0.332	942[a]								
ESEBUS	-0.088	-0.107	-0.213	955[a]							
ESEPLN	0.087	-0.092	-0.047	-0.197	961[a]						
ESEMSH	-0.135	0.040	-0.053	-0.164	-0.210	961[a]					
ESEIMP	0.019	-0.167	-0.113	-0.081	-0.147	-0.207	964[a]				
ETECH	0.021	-0.064	-0.068	-0.106	-0.209	0.070	-0.138	950[a]			
EBMS	0.000	-0.019	0.035	-0.031	-0.054	-0.042	-0.180	-0.308	946[a]		
EPRS	-0.051	-0.075	-0.011	0.127	0.050	-0.173	-0.043	-0.268	-0.316	939[a]	
ENTR	-0.008	0.183	0.078	-0.205	-0.091	-0.033	-0.147	0.026	-0.196	-0.242	945[a]

Source: Author's compilation

Table 6.27 illustrates that the Anti-Image Correlation, which is the correlation number marked ([a]) has 11 variables that meet the requirement of measure of sampling adequacy with values

greater than the 0.5 threshold. This means that the 11 variables in this study are feasible for further factor analysis.

6.6 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 with varimax rotation. After factor analysis, the resulting constructs were assessed for reliability. Reliability was assessed with Cronbach's alpha and 'Cronbach alpha if item deleted'. Table 6.28 shows the factor loadings for each of the measured constructs, together with the results for reliability checks (Cronbach alpha values), Eigenvalues and percentage variance, Mean and Standard Deviation. Muijs (2011) argued that as a rule of thumb, a variable is said to belong to a factor, when its factor loading on such factor is more than 0.3 or less than -0.3.

Table 6. 28: Exploratory factor analysis

Items	Items factor loading											Cronbach' α if item deleted
	1	2	3	4	5	6	7	8	9	10	11	
RISK_2	.806											.840
RISK_4	.739											.843
RISK_1	.704											.845
RISK_5	.681											.840
RISK_3	.670											.847
INVT_6		.752										.834
INVT_3		.725										.841
INVT_1		.721										.840
INVT_5		.641										.837
INVT_2		.621										.844
INVT_4		.618										.840
PRCTV_1			.814									.833
PRCTV_3			.792									.833
PRCTV_2			.778									.835
PRCTV_4			.737									.838
ESEBUS_1				.810								.899
ESEBUS_3				.798								.899
ESEBUS_2				.770								.900
ESEBUS_4				.755								.900
ESEBUS_5				.731								.900
ESEPLN_3					.813							.899
ESEPLN_2					.738							.900
ESEPLN_4					.727							.901
ESEPLN_1					.704							.900
ESEMSH_2						.772						.898
ESEMSH_3						.766						.899
ESEMSH_5						.738						.901
ESEMSH_1						.725						.899
ESEMSH_4						.712						.901
ESEIMP_8							.741					.899
ESEIMP_2							.735					.899
ESEIMP_7							.721					.901
ESEIMP_1							.713					.901
ESEIMP_3							.705					.899
ESEIMP_5							.695					.900
ESEIMP_6							.657					.900
ETECH_5								.759				.853
ETECH_7								.735				.855
ETECH_8								.711				.857
ETECH_1								.703				.857
ETECH_3								.698				.858
ETECH_2								.685				.859
ETECH_10								.667				.861
ETECH_9								.663				.861
ETECH_6								.634				.862
ETECH_4								.570				.868
EBMS_6									.790			.882
EBMS_2									.756			.884
EBMS_5									.754			.884
EBMS_3									.713			.887
EBMS_7									.711			.887
EBMS_10									.709			.887
EBMS_8									.689			.888
EBMS_9									.679			.889
EBMS_1									.677			.889
EBMS_4									.682			.892
EBMS_11									.615			.893
EPRS_3										.754		.883
EPRS_10										.742		.884
EPRS_2										.736		.884
EPRS_11										.735		.884
EPRS_9										.718		.885
EPRS_6										.700		.886
EPRS_8										.688		.887
EPRS_7										.680		.888
EPRS_4										.679		.887
EPRS_5										.648		.890
EPRS_1										.637		.891
ENTR_2											.742	.892
ENTR_3											.730	.892
ENTR_8											.729	.892
ENTR_7											.725	.892
ENTR_10											.717	.892
ENTR_5											.700	.894
ENTR_6											.700	.894
ENTR_13											.687	.894
ENTR_12											.686	.894
ENTR_9											.685	.894
ENTR_4											.657	.896
ENTR_11											.593	.900
Cronbach's α	0.767	0.761	0.784	0.831	0.731	0.796	0.837	0.872	0.897	0.896	0.902	
Eigenvalue	2.604	2.785	2.437	2.990	2.230	2.758	3.634	4.686	5.446	5.429	5.897	
Mean	4.79	4.99	5.16	5.00	4.91	4.86	4.96	4.90	4.94	4.95	4.88	
Std. deviation	0.755	0.782	0.790	0.817	0.825	0.868	0.801	0.774	0.777	0.760	0.803	

RISK = Risk-taking skills; INVT = Innovative skills; PRCTV = Proactive skills; ESEBUS = Entrepreneurial Self-Efficacy Business Searching; ESEPLN = Entrepreneurial Self-Efficacy Business Planning; ESEMSH = Entrepreneurial Self-Efficacy Business Marshalling; ESEIMP= Entrepreneurial Self-Efficacy Business Implementing; ETECH = Entrepreneurship Education Technical skills; EBMS = Entrepreneurship Education Business Management skills; EPRS = Entrepreneurship Education Personal Entrepreneurial skills; and ENTR = Entrepreneurial Readiness.

Source: Author's compilation.

The illustration in Table 6. 28 shows the retained items for the eleven factors after stages of dimension reduction from the factor analysis. The entire measures indicate good internal consistency for reliability of all the extracted factors in this study given that the Cronbach's alpha coefficient of all the factors were between 0.731 and 0.902. From the Principal Component Analysis (PCA), using rotated varimax, the Eigenvalue for the first factor which measures risk-taking skills is 2.604 and explains 52.1% variance from the scale. The second factor which measures innovative skills has Eigenvalue of 2.785 which predicts 46.4% variance from the scale. The third factor which measures proactiveness has Eigenvalue of 2.437 which explains 60.9% variance from the scale. The Eigenvalue for the fourth factor which measures ESE business searching is 2.990 which predicts 59.8% variance from the scale. The fifth factor which measures ESE business planning has Eigenvalue of 2.230 and explains 55.7% variance from the scale. The sixth factor which measures ESE business marshalling has Eigenvalue of 2.758 and predicts 55.2% variance from the scale. The seventh factor which measures ESE implementing has Eigenvalue of 3.634 and explains 45.4% variance from the scale.

The eighth factor which measures technical skills has Eigenvalue of 4.686 and accounts for 46.9% variance from the scale. Business management skills is the ninth factor with Eigenvalue of 5.446 which predicts 49.5% variance from the scale. The tenth factor which measures personal entrepreneurial skills has Eigenvalue of 5.429 and explains 49.4% variance from the scale. The eleventh factor measures entrepreneurial readiness with Eigenvalue 5.897 which predicts 45.4% variance from the scale.

In terms of IEO, as shown in Table 6.28, the top-rated scales of IEO were proactiveness (mean = 5.16; SD = 0.790), followed by innovativeness (mean = 4.99; SD = 0.782) and risk-taking (mean = 4.79; SD = 0.755). In terms of ESE, the top-rated scales of ESE were 'searching' (mean = 5.00; SD = 0.817), followed by 'implementing' (mean = 4.96; SD = 0.801), followed by 'planning' (mean = 4.91; SD = 0.825), and 'marshalling' (mean = 4.86; SD = 0.868). In

terms of Entrepreneurship Education, the top-rated scales were 'personal entrepreneurship skills' (mean = 4.95; SD = 0.760), followed by 'business management. skills' (mean = 4.94; SD = 0.777), and 'technical skills' (mean = 4.90; SD = 0.774). For Entrepreneurial Readiness, mean = 4.88 and SD = 0.803.

6.7 Analysis of research questions (RQ)

In this section, the inferential statistical tool using the PPMC was utilised to examine the degree of association between the variables, and also respond to the research questions.

6.7.1 RQ 1- Influence of entrepreneurship education on entrepreneurial readiness.

Research question one was stated to determine the association between entrepreneurship education and entrepreneurial readiness of exit level students at selected TVET institutions in Lagos Metropolis Nigeria. Entrepreneurship education was measured from the scale developed by Elmuti *et al.* (2012), and Coetzee (2014). Entrepreneurial readiness scale was adapted from the index scale developed by Coduras *et al.* (2016) and Ruiz *et al.* (2016)

Table 6. 29: Pearson correlation coefficient

	Variables	Mean	Std. Dev.	1	2	3	4
1	Technical skills	4.903	0.774	1			
2	Business management skills	4.944	0.777	0.823**	1		
3	Personal skills	4.948	0.760	0.786**	0.814**	1	
4	Entrepreneurial readiness	4.875	0.803	0.660**	0.725**	0.707**	1

Correlation is significant at the 0.01 level (2-tailed)

Source: Author's compilation

The composition in Table 6.29 above reveals the outcome of the bivariate analysis between entrepreneurship education and entrepreneurial readiness. Table 6.29 also shows that all pairs of entrepreneurship education have significant and positive correlation with entrepreneurial readiness. Entrepreneurial readiness was strongly and positively correlated with technical skills (r=0.660; N= 288; p=<0.001), business management skills (r=0.725; N= 288; p=<0.001), and personal entrepreneurial skills (r=0.707; N= 288; p=<0.001). Among all the aspect of entrepreneurship education, personal skills recorded the highest correlation with entrepreneurship readiness at a mean of (4.948), while entrepreneurial readiness is mostly associated with business management skills.

This implies that entrepreneurship education that is put in place at the selected TVET institutions has significant impact on the exit level students' entrepreneurial readiness. This

suggests that entrepreneurship education is a determinant of entrepreneurial readiness. Previous studies have also identified the impact of entrepreneurship education as a motivation for students' entrepreneurial readiness (Othman *et al.,* 2012; Elmuti *et al.,* 2013; Olugbola, 2017). Therefore, research question one which aimed to establish the influence of entrepreneurship education on students' entrepreneurial readiness is answered.

6.7.2 RQ2 Influence of entrepreneurial self-efficacy (ESE) on entrepreneurial readiness

Research question two was formulated to determine the relationship between ESE and entrepreneurial readiness. The items for ESE was adapted from McGee *et al.,* (2009) ESE task-specific scale, and Maritz and Brown (2013) ESE scale. Entrepreneurial readiness was measured by Coduras *et al.* (2016) and Ruiz *et al*. (2016) entrepreneurial readiness scale.

Table 6. 30: Pearson correlation coefficient

	Variables	Mean	Std. Dev.	1	2	3	4	5
1	ESE searching	4.997	0.816	1				
2	ESE planning	4.914	0.825	0.735**	1			
3	ESE marshalling	4.860	0.867	0.699**	0.720**	1		
4	ESE implementing	4.961	0.801	0.738**	0.765**	0.747**	1	
5	Entrepreneurial readiness	4.875	0.803	0.636**	0.638**	0.620**	0.687**	1

Correlation is significant at the 0.01 level (2-tailed)

Source: Author's compilation

The outcome in Table 6.30 reveals the correlation analysis between ESE and entrepreneurial readiness. The bivariate analysis shows that all the components of ESE have positive and significant association with entrepreneurial readiness. Entrepreneurial readiness shows correlation with ESE business searching $r = 0.636$, $N = 288$, $p<0.001$, ESE business planning $r = 0.638$, $N = 288$, $p<0.001$, ESE business marshalling $r = 0.620$, $N = 288$, $p<0.001$, and ESE business implementing $r = 0.687$, $N = 288$, $p<0.001$. This finding suggests that increase in ESE will equally increase students' entrepreneurial readiness. This also shows that ESE is a determinant of entrepreneurial readiness. Further, ESE business searching shows the highest correlation score with entrepreneurial readiness among all the components of ESE with a mean value of 4.997, and entrepreneurial readiness shows the strongest association with ESE business implementing. This implies that entrepreneurial readiness is highly determined by implementation of business enterprise or activating a business start-up. Similar findings have also been demonstrated on the impact of ESE on entrepreneurial readiness (Pihie & Bagheri (2011; Maritz & Brown, 2013).

Therefore, research question two which aimed to establish the influence of ESE on entrepreneurial readiness is achieved.

6.7.3 RQ3 Influence of individual entrepreneurial orientation (IEO) on entrepreneurial readiness

Research question three was stated to examine the relation between IEO and entrepreneurial readiness. The items for IEO was adopted from the IEO scale developed by Bolton and Lane (2012) and modified items from Vogelsang (2015). Entrepreneurial readiness was measured by the ERI scale developed by Coduras *et al.*, (2016) and Ruiz *et al.* (2016).

Table 6. 31: Pearson correlation coefficient

	Variables	Mean	Std. Dev.	1	2	3	4
1	IEO risk-taking	4.790	0.755	1			
2	IEO innovativeness	4.985	0.782	0.475**	1		
3	IEO proactivity	5.156	0.790	0.520**	0.703**	1	
4	Entrepreneurial readiness	4.875	0.803	0.334**	0.415**	0.456**	1

Correlation is significant at the 0.01 level (2-tailed)

Source: Author's compilation

The presentation in table 6.31 depicts the outcome of the Pearson Correlation Coefficient on the relationship between IEO and entrepreneurial readiness. The correlation coefficient as shown in Table 6.31 reveals that all propensities of IEO have significant and positive association with entrepreneurial readiness. IEO risk-taking ($r= 0.334$, $N = 288$, $p<0.001$), IEO innovativeness ($r= 0.415$, $N = 288$, $p<0.001$) and IEO proactivity ($r= 0.456$, $N = 288$, $p<0.001$). This indicates that IEO is a determinant factor of entrepreneurial readiness for exit level students at selected TVET institutions in Lagos Metropolis. In order words, an increase in the level of IEO is associated with an increase in the level of entrepreneurial readiness of the students. In similar vein, IEO proactivity shows the strongest correlation with entrepreneurial readiness at a mean value of (5.156), and entrepreneurial readiness shows its highest inclination with IEO proactivity.

Next is to test the conceptual model by jointly testing the association of the independent variables on the dependent variable. To achieve that, there is need to verify the presence or absence of multi-collinearity. Table 6.32 depicts the multi-collinearity of the independent variables on the dependent variable.

Table 6. 32: Test of Multi-Collinearity (Collinearity Statistics)

	Variables	B	Std. Error	T	Sig.	Tolerance	VIF
	Constant	.778	.242	3.216	.001		
1	Technical skills	-.035	.081	-.433	.665	.225	4.435
2	Business management skills	.270	.081	3.316	.001	.220	4.548
3	Personal skills	.307	.074	4.135	.000	.276	3.625
4	ESE searching	.223	.064	3.483	.001	.322	3.110
5	ESE planning	.100	.066	1.516	.131	.297	3.367
6	ESE marshaling	.032	.059	.551	.582	.339	2.946
7	ESE implementing	.190	.077	2.465	.014	.230	4.343
8	Risk-taking	.006	.048	.131	.896	.674	1.484
9	Innovativeness	-.182	.059	-3.090	.002	.415	2.410
10	Proactivity	-.080	.061	-1.308	.192	.377	2.653

Source: Author's compilation

Results from Table 6.32 indicates that the variance inflation (VIF) values were well below 10, as well as high tolerance values (tolerance > 0.10). Hence, multi-collinearity was not an issue and the regression analysis results can be relied upon.

6.9 Test of hypotheses

This study formulated some hypotheses which were tested using regression analysis.

6.9.1 Hypothesis one

H_1: *"Entrepreneurship education has influence on entrepreneurial readiness"*. $p < 0.05$

Ho: *"Entrepreneurship education has no influence on entrepreneurial readiness"*. $p > 0.05$

The dependent variable, entrepreneurial readiness was regressed on the three components of entrepreneurship education i.e. technical skills, business management skills, and personal entrepreneurial skills. Results of the regression are shown in Table 6.33 below.

Table 6.33: Entrepreneurship education as a predictor of entrepreneurial readiness

Variables	B	Beta	t	p-value	R^2	F	df	P-value
Constant	.751		3.442	.001	0.568	124.016	3	<.0005
Technical skills	.087	0.084	1.140	.225				
Business mgt. skills	.414	0.399	5.096	<.0005				
Personal skills	.334	0.316	4.395	<.0005				

a. Predictor: Technical skills, Business management skills, Personal skills

b. Dependent Variable (DV): Entrepreneurial readiness

Multiple linear regression model was fitted with three independent variables being entered in to the model. Table 6.33 shows that the model was able to explain 56.8% of the variation in the dependent variable (R^2 = 0.568) which was found to significantly predict the dependent variable, F (3,283) = 124.016, p = < 0.05). Though not significant, technical skills β= .084, t (286) = 1.140, p > 0.05) was associated with increased entrepreneurial readiness. Holding the effect of other variables constant, business management skills β= .399, t (286) = 5.096, p = < 0.05) and personal entrepreneurship skills β= .316, t (286) = 4.395, p = < 0.05) were significantly associated with increased entrepreneurial readiness. Therefore, the alternative hypothesis (**H_1**) which states that *'entrepreneurship education has influence on entrepreneurial readiness'* is accepted. Based on this outcome, the research objective one is achieved.

6.9.2 Hypothesis two

H_2: "*Entrepreneurial self-efficacy (ESE) has influence on entrepreneurial readiness"* p < 0.05

Ho: "*Entrepreneurial self-efficacy (ESE) has no influence on entrepreneurial readiness"* p > 0.05

To determine if ESE has influence on entrepreneurial readiness, the dependent variable was regressed on all the four components of ESE as shown in Table 6.34 below.

Table 6.34: ESE as a predictor of entrepreneurial readiness

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

a. Predictor: ESE searching, ESE planning, ESE marshalling, ESE implementing
b. Dependent Variable (DV): Entrepreneurial readiness

Table 6.34 shows the outcome of the regression analysis with the value R^2 as 0.528 which means that entrepreneurial self-efficacy explains 52.8% variance of entrepreneurial readiness from the model. This suggests that ESE significantly predicts entrepreneurial readiness. The regression model reveals the ESE standardised beta value (ESE searching $\beta = .186$, $t(287) = 2.764$, $p<0.05$, ESE planning $\beta = .149$, $t(287) = 2.099$, $p<0.05$ and ESE implementing $\beta = .339$, $t(287) = 4.602$, $p<0.05$ showed significant association with entrepreneurial readiness. But ESE marshalling $\beta = .131$, $t(287) = 1.953$, $p>0.05$) revealed an insignificant correlation with entrepreneurial readiness while holding other variables constant. On the aggregate, there is a significant linear association between ESE and entrepreneurial readiness $F(4;283) = 79.028$, $p<0.05$. This indicates that ESE has influence on entrepreneurial readiness. These findings support the alternative hypothesis (**H_2**) which states that 'ESE significantly influence entrepreneurial readiness. Therefore, the research objective which sought to determine the influence of ESE on entrepreneurial readiness is established. This result also aligned with the correlation outcome (see Table 6.30).

6.9.3 Hypothesis three

H_3: *"Individual entrepreneurial orientation has impact on entrepreneurial readiness*". $p < 0.05$

Ho: *"Individual entrepreneurial orientation has no impact on entrepreneurial readiness*". $p > 0.05$

Hypothesis three will be examined by regressing entrepreneurial readiness on the three propensities of IEO depicted in Table 6.35 below.

Table 6.35: IEO as a predictor of entrepreneurial readiness

Variables	B	Beta	t	p-value	R^2	F	df	P-value
Constant	1.989		6.190	<.0005	.234	28.985	3;284	<.0005
Risk-taking	.116	.109	1.769	.079				
Innovativeness	.168	.163	2.200	.029				
Proactiveness	.291	.286	3.745	<.0005				

a. **Predictor: Risk-taking, Innovativeness, Proactiveness**
b. **Dependent Variable (DV): Entrepreneurial readiness**

As shown in Table 6.35, the result of the regression model indicates the value of R^2 as 0.234 which suggests that IEO explains 23.4% variations in entrepreneurial readiness. This suggests that IEO predicts entrepreneurial readiness. Also, innovativeness $\beta = 0.168$, $t(287) = 2.200$, $p<0.05$ and proactiveness $\beta = 0.291$, $t(287) = 3.745$, $p<0.05$ were significantly correlated with entrepreneurial readiness. However, the standardised beta value for risk-taking $\beta = 0.116$, $t(287) = 1.769$, $p>0.05$ revealed an insignificant relationship with entrepreneurial readiness. A significant linear association is found between IEO and entrepreneurial readiness ($F(3,284) = 28.985$, $p<0.05$) on the aggregate. Therefore, the research hypothesis which states that "*individual entrepreneurial orientation has impact on entrepreneurial readiness"* is accepted and the research objective is established.

6.10 Qualitative analysis

This section illustrates the outcome of the qualitative data gathered through in-depth interviews from the entrepreneurship facilitators at the three selected TVET institutions in Lagos Metropolis, Nigeria. The aim of the interview was to collect data in order to: (1) understand the influence of entrepreneurship education (EE) on exit level students' entrepreneurial readiness, (2) determine the impact of entrepreneurial self-efficacy on entrepreneurial readiness of exit level students (3) investigate the influence of individual entrepreneurial orientation on entrepreneurial readiness of exit level students, and (4) explore the challenges affecting entrepreneurship education at the selected TVET institutions in Lagos Metropolis.

6.10.1 Entrepreneurship education propensities as determinants of Entrepreneurial Readiness

This study explores EE, ESE and IEO as determinants of entrepreneurial readiness at selected public TVET institutions in Lagos, Nigeria. Figure 6.1 below shows the themes and sub-themes of psychosocial components that emerged from NVivo 12 software.

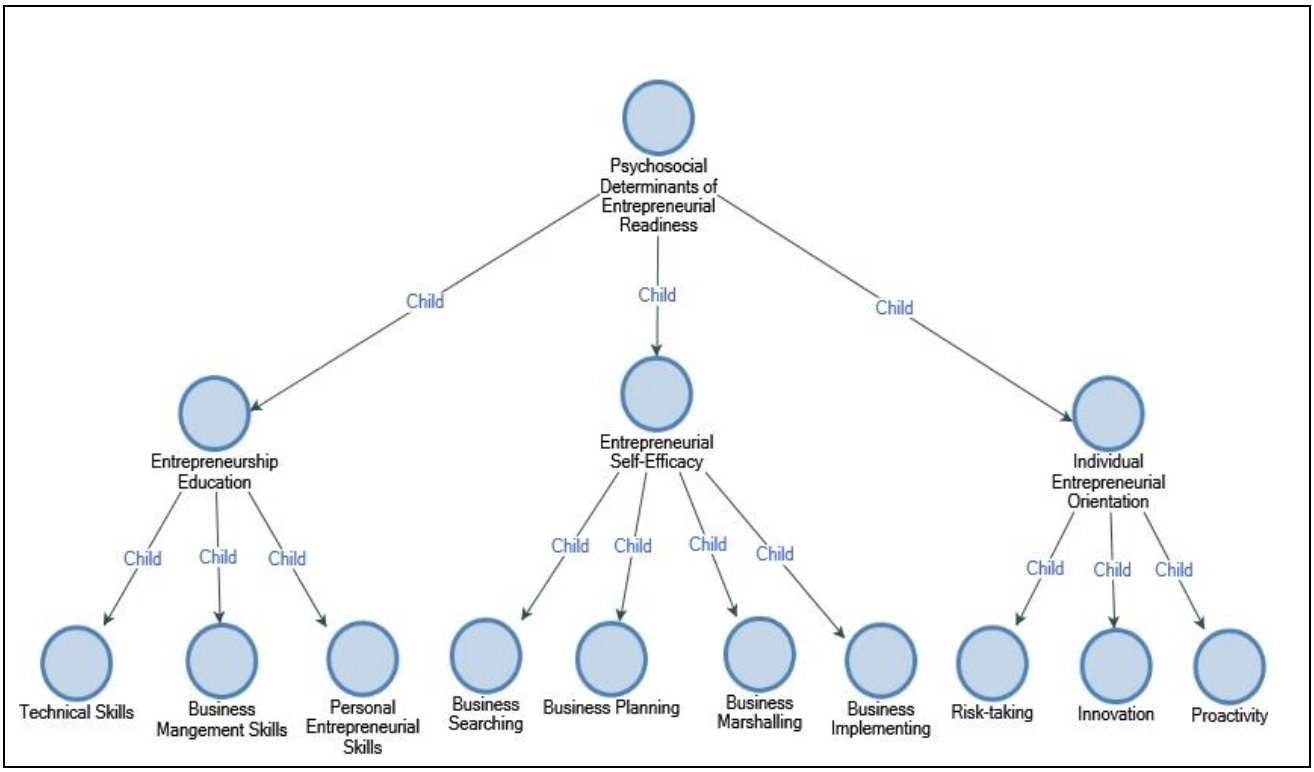

Figure 6.1 Psychosocial determinants of entrepreneurial readiness at selected public TVET institutions in Lagos Metropolis.
Source: Emerged from NVivo 12 analysis

As revealed in Figure 6.1, the psychosocial determinants and their sub-constructs were found to be embedded in the entrepreneurship education scheme of work at the selected public TVET institutions. The interview questions were designed in line with the key variables and responses were themed according to responses that emerged in line with the variables. The responses from the in-depth interviews show the availability of the three components of entrepreneurship education namely: technical skills, business management skills and personal entrepreneurial skills. Responses on entrepreneurial self-efficacy also show the presence of the sub-themes which includes: business searching, business planning, business marshalling and business implementing. Lastly, individual entrepreneurial orientation also depicts three sub-themes which consists of risk-taking, innovation and proactivity. The next paragraph explains the views and perceptions of the interviewed respondents with regards to entrepreneurship education in place at the institutions.

6.10.2 Assessment of entrepreneurship education

The transcribed data received from the structured questions revealed that the Lagos State Ministry of Education made provision for entrepreneurship education in the selected TVET institutions in the State. The interview responses that emerged from the in-depth interview sessions with regards to entrepreneurship education were coded into three sub-themes, namely, business management skills, personal entrepreneurial skills and technical skills. Figure 6.2 below reveals the outcome from the respondents on entrepreneurship education.

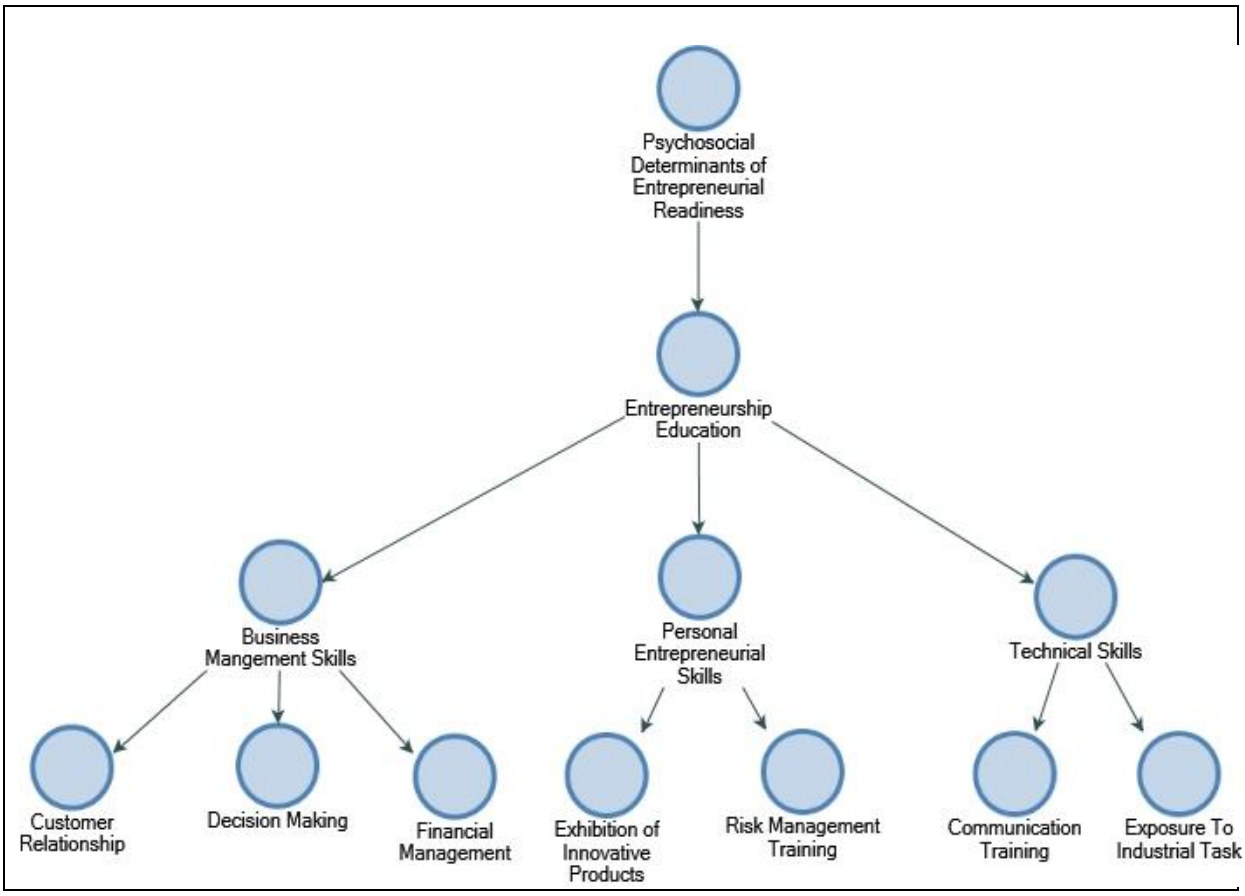

Figure 6. 2: Influence of entrepreneurship education on entrepreneurial readiness at selected TVET Institutions in Lagos, Nigeria.
Source: Emerged from NVivo 12 analysis

The composition in Figure 6.2 above presents the three specific skills of entrepreneurship education as identified in literatures. Considering the gaps in literatures, this study focuses on these specific skills (business management skills, personal entrepreneurial skills and technical skills) as components of entrepreneurship education to determine entrepreneurial readiness for venture creation. This is one of the objectives of this research study. All the participants

individually affirmed that entrepreneurship education is part of the scheme of work. Figure 6.3 below depicts the outcome of the model on business management skills.

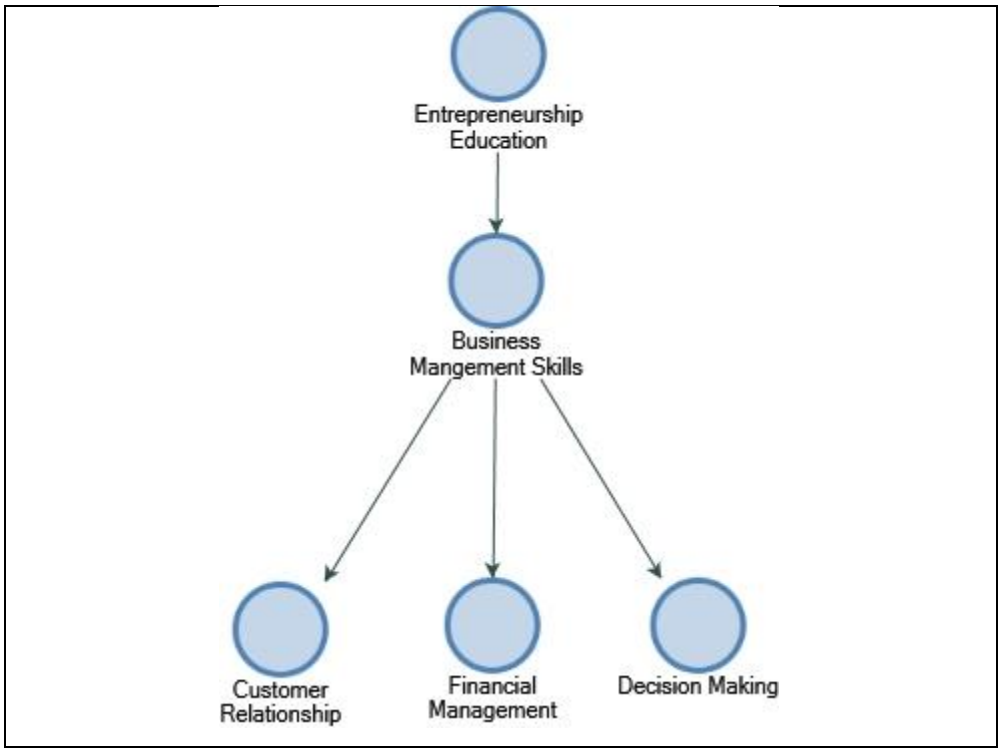

Figure 6. 3: Influence of business management skills on entrepreneurial readiness
Source: Emerged from NVivo 12 analysis

The research question is: '*what type of entrepreneurship training is available to develop the students on financial management, customer relation, accounting, and decision-making skills.?'* As shown in Figure 6.3 above, the sub-themes that emerged for business management skills were customer relationship, decision-making and financial management. Some of the respondents stated that the students are given training on crucial factors of business management skills.

Customer relation and decision-making are components of business management training in place at the selected TVET institutions in Lagos Metropolis. Participant 7 stated that:

"students are taught different aspect of business management such as: customer relationship training, record keeping, financial records, timing in business, honesty in business".

Taking business decision is pivotal to managers and entrepreneurs. Decision making process is taught as a topic from the entrepreneurship curriculum in all the selected TVET institutions.

Some of the participants affirmed that decision-making is a key success determinant of business start-up.

According to Participant 6:

"students are given training on key success factors in setting up a business, such as decision making."

Further, Participant 3 affirmed that decision-making training and how to relate with clients are part of the entrepreneurship education.

"in the entrepreneurship education, we focus on good customer relations and honesty. We also teach them how to take business decisions"

The record keeping training is an aspect of financial management. This training is done through the entrepreneurship training which involves documentation of day-to-day business activities. Some of the participants acknowledged the availability of the training.

Participant 5 stated:

"we give them training in business management and finance. The students have been acquainted with skills of record keeping, time management and punctuality in the line of business".

This statement was further corroborated by Participant 8:

"we organise training on record keeping and financial records."

However, Participant 1 argued that:

"The students lack financial management skills. They don't keep account records of their business expenses, and the business often fail early. Although, most of them are very good at their vocational skills but they lack resource management skills."

This is an indication that students are trained on the use of record keeping and financial records but failed to put it to practice which often leads to early closure of business. It is instructive to note that these trainings are classroom based as observed in the entrepreneurship curriculum. The information from participant 1 suggests that some of the students already own business but lack the applicability of financial skills to sustain the business which often result to business failure. It is in this sense that the ILO (1990) report affirmed that more than 50% of businesses

fail before five years of establishment. The next component of entrepreneurship education is personal entrepreneurial skills as shown in Figure 6.4 below.

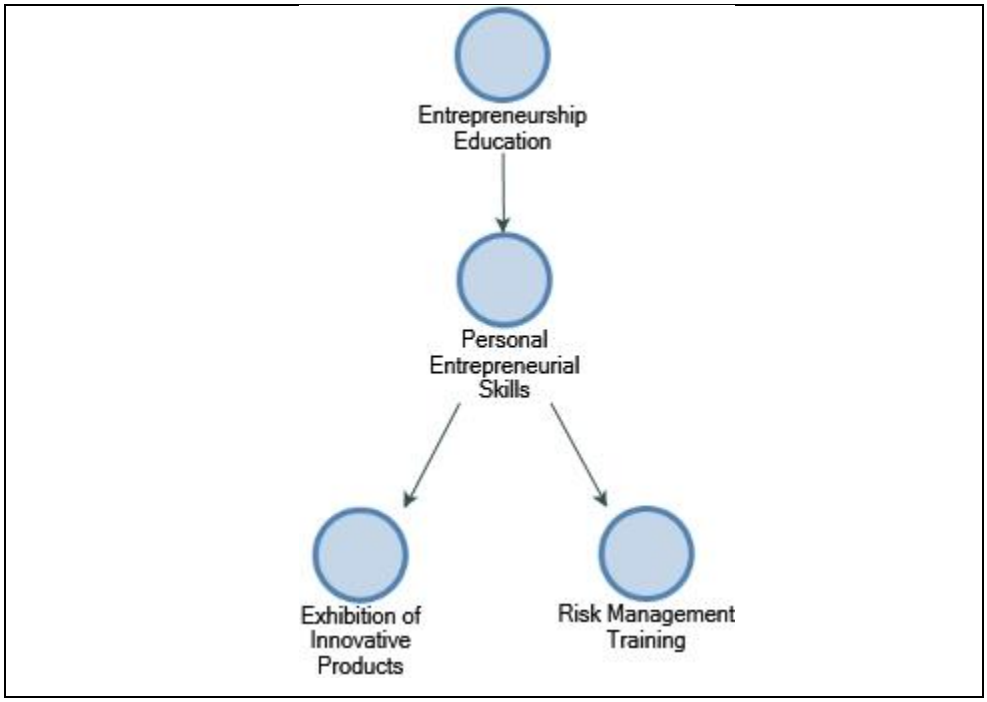

Figure 6. 4 Influence of personal entrepreneurial skills on entrepreneurial readiness
Source: Emerged from NVivo 12 analysis

Personal entrepreneurial skills refer to innovation, risk-taking and persistence skills required for successful enterprise (Henry *et al.*, 2005; Almarhy & Sarhea, 2018). The question stated that: '*what type of entrepreneurship training is available on risk-taking, innovation and persistence in business?'* Figure 6.4 above shows that two sub-themes emerged from the model which are risk management training and exhibition of innovative products. These sub-themes have been identified as components of personal entrepreneurial skills. According to the reports from some of the participants, risk-taking is part of the entrepreneurship scheme of work.

Participant 1 stated that:

"we follow the entrepreneurship curriculum guide which includes risk management".

Participant 7 also affirmed that:

"students take courses on entrepreneurship and taking business risk is a topic in that course".

Participant 2 also pointed out:

"we give employability skills training, and risk management training."

In contrast to the above responses, some of the respondents noted that method of delivery and training cost are hampering skills transfer. The risk management training is done theoretically. The students are not exposed to real-life situation and therefore, may not be able to apply risk-taking skills in business.

Participant 3 lamented that:

"there is no effective training for students on taking business risk because of the expenses involved. There is need for workshop training".

According to Participant 1:

"The entrepreneurship curriculum lacks practical programs. And it is not addressing business confidence"

This suggests that the risk management training available at the selected TVET institutions requires practical activities, and this comes with a cost. Consequently, the risk management training may not be effective. This implies that the risk management training does not influence students' entrepreneurial readiness. This justifies the low level of risk-taking factor in the quantitative analysis. (See Table 6.20).

Another training offered through entrepreneurship education is the exhibition of products or projects that showcases the innovative skills of the students. The designed or manufactured products of the students are displayed during the workshop. The exhibition is usually in form of inter-schools' competition where students from different TVET institutes come together to exhibit the best collection of innovative projects. This innovative challenge fosters innovation and creativity among the students.

Participant 4:

"we have school of business, school of technical education, school of science and school of vocational education. They all come together for the workshop to showcase their projects".

All the participants agreed that the students are able to produce some materials for home use.

Participant 5*:*

"my students designed prototype of electric generator, electronic-powered gate".

Participant 6:

"*some products designed by students are toilet soap wash, air freshener, natural milk etc."*

Participant 7:

"the students are involved in insecticides production and others like perfume, liquid soap, bathing soap, floor tiling, block laying, mannequin etc.".

It is safe to say that the exhibition of products encourages innovative skills among the students. This affirms the report of Lame and Yusoff (2013) that practical entrepreneurship training influence students' entrepreneurial skills. Additionally, students are able to create or manufacture products for consumption which makes the exhibition initiative effective. This justifies the assertion that entrepreneurship is action oriented. Other action-oriented skills required in entrepreneurship education are technical skills. Below is the theme and sub-themes that emerged from the in-depth interview sessions as presented in Figure 6.5 below.

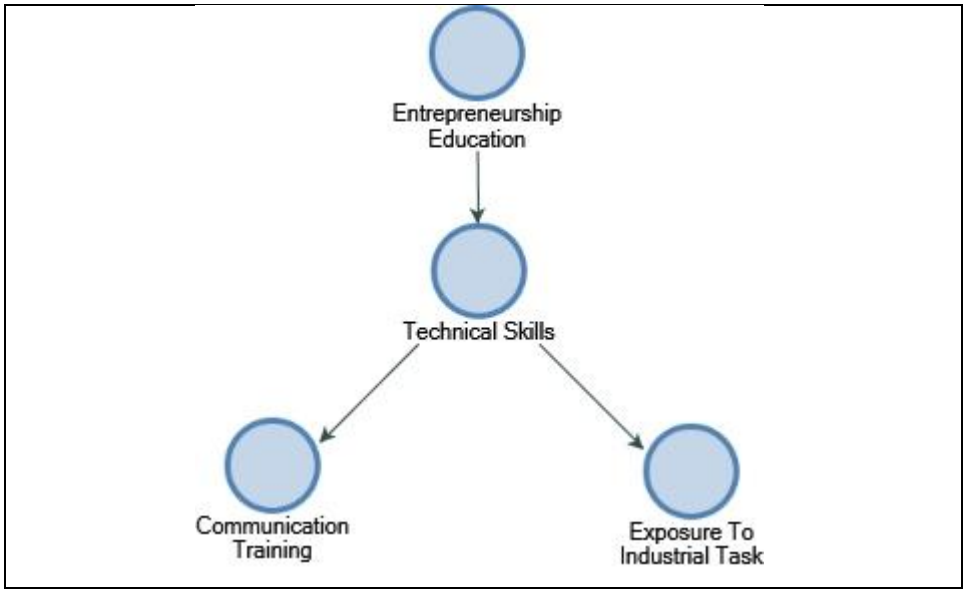

Figure 6. 5: Influence of personal entrepreneurial skills on entrepreneurial readiness
Source: Outcome from NVivo 12 analysis

Technical skills referred to written and oral communication, technical implementation skills, organising skills, problem solving and interpersonal skills (Martins and Pear, 2015). The question states that: '*what type of entrepreneurship training is available on communication, organising, problem-solving and interpersonal skills?'* The outcome from the model as shown in Figure 6.5 above reveals that two sub-themes emerged with regards to technical skills which include, communication training and exposure to industrial task. All the participants agreed that communication is a compulsory course for all the students. Communication skills are regarded as entrepreneurship skills (Martins & Pear, 2015).

Exposure to industrial task is a way the selected TVET institutions assist the students to apply problem-solving skills. Problem-solving skills is an aspect of technical skills (Almarhy & Sarea, 2018). Some of the participants affirmed that the students are engaged with some real-life industrial problems, during specific period of industrial attachment. Students are expected to complete some industrial tasks that builds problem-solving skills. This is usually done during the industrial attachment which is not part of the entrepreneurship scheme of work.

Participant 4:

"through industrial attachment, we get them acquainted to the industry and engage them with industrial task. The experience builds their confidence to face business challenges"

Participant 8:

"we organize a lot of training through the "Young Entrepreneurship Club" enlightening them on how to overcome business failure"

The analysis on the entrepreneurship education that is available at the selected TVET institutions shows that most parts of the specific skills (business management skills, personal entrepreneurial skills and technical skills) are covered in the entrepreneurship curriculum. However, the study notes that most of the entrepreneurship trainings are theory based. Based on this result, some of the participants genuinely concluded that the students are not entrepreneurially ready.

Participant 1:

"I don't think the students are ready for the future of business, may be in other country. We are far from it."

Participant 4:

"our students need to acquire additional skills to be ready for entrepreneurship business. The standard is still very low compare to other countries".

The participants stated some challenges facing the TVET institutions as it affects entrepreneurial readiness of the students. These challenges are discussed in other sections below.

6.10.3 Assessment of Entrepreneurial self-efficacy

A considerable number of studies has revealed that entrepreneurship education must focus on developing students' ESE towards venture creation (Pihie & Bagheri, 2011; Maritz and Brown, 2013). Figure 6.6 below shows that the entrepreneurship education curriculum at the selected TVET institutions made provision for ESE trainings. The four task-specific of ESE (business searching, business planning, business marshalling and business implementing) were identified by the respondents as part of the entrepreneurship education curriculum. This report shows that the current entrepreneurship education scheme at the selected TVET institutions addressed ESE components. Figure 6.6 below shows the themes and sub-themes that emerged from the in-depth interviews.

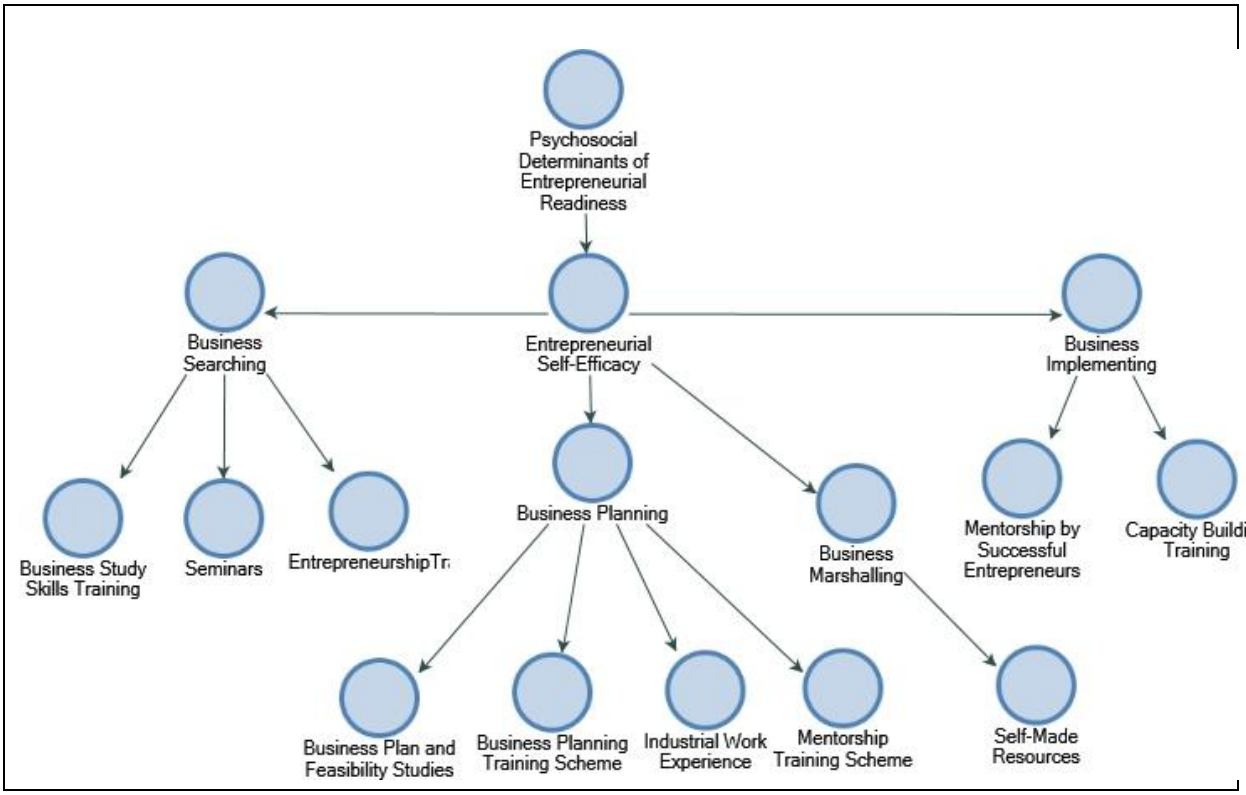

Figure 6. 6: Response on ESE as a determinant of entrepreneurial readiness
Source: Emerged from NVivo 12 analysis.

This model was aimed at establishing if trainings on ESE at selected TVET institutions has influence on students' entrepreneurial readiness by addressing the four task-specific phases of ESE. It should be noted that the availability and effective implementation of ESE at the selected TVET institutions suggests a link between entrepreneurship education and ESE, while the positive impact on students indicates significance of entrepreneurial readiness. Figure 6.7 below depicts the three sub-themes that emerged on ESE business searching.

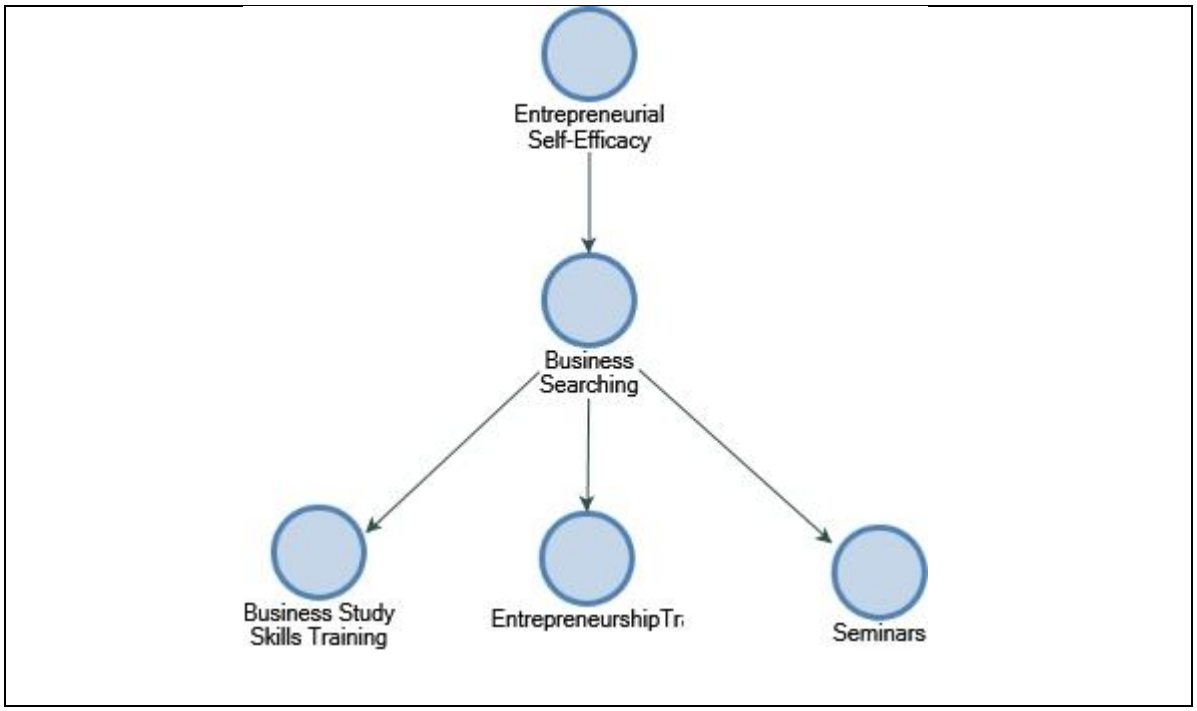

Figure 6. 7 Influence of ESE business searching on entrepreneurial readiness
Source: Emerged from NVivo 12 analysis

This is the first entrepreneurial task that must be accomplished. According to McGee *et al.,* (2009), it is the stage of creative thinking of a unique idea or identification of business opportunities. Most of the participants agreed that the students undergo a 3-year entrepreneurship course which is skill-bound and it gives the ability to identify business opportunities. Business study skill training, seminars and entrepreneurship training were the generated themes for business searching. Participants 3 and 8 respectively pointed out that:

"*We have a 3-year course of entrepreneurship training, also we have business study skills training which is also a regular academic course with practical experience".*

"our students undergo some trainings, entrepreneurship training, business study skills training, and seminars on business opportunities".

Some of the interview responses suggest that many of the students have been able to identify business opportunities in different fields.

Participant 6 stated that:

"Our students have been able to identify business opportunities in the field of engineering, welding and fabrication, electrical installations, computer works, motor vehicle mechanic works, construction fields such as bricklaying, painting and decoration and plumbing".

This assertion was supported by Participant 1:

"some students have been able to convert all their trades to business opportunities. Some of them are in construction, they have been moulding blocks, they have been laying tiles, and all these things are business opportunities once it is properly channelled".

The effect of the three basic trainings towards business searching shows positive outcome. According to the report, some of the students were able to identify business opportunities in their relevant fields. This implies that training on ESE business searching has significant impact on identification of business opportunities. The translation of business opportunities into business plans is shown in Figure 6.8 below.

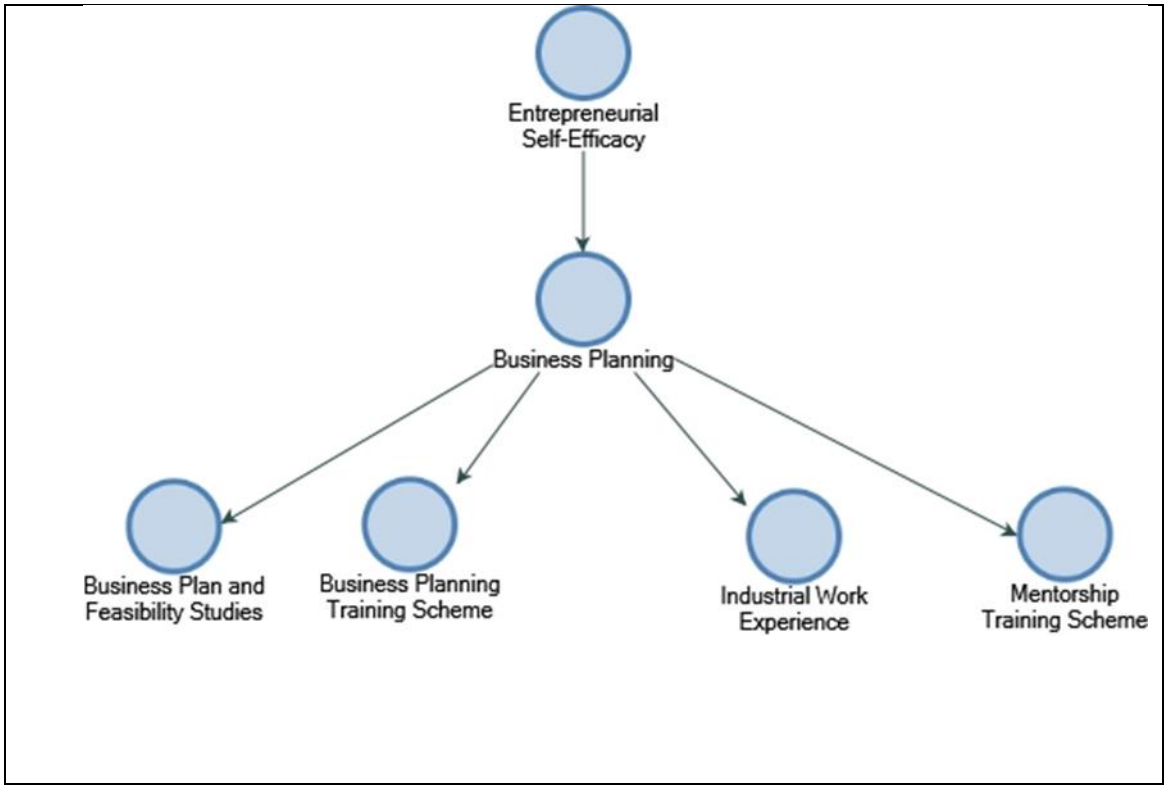

Figure 6. 8: Influence of ESE business planning on entrepreneurial readiness
Source: Emerged from NVivo 12 analysis

The business planning phase refers to the stage of transforming the unique business idea or opportunity into a business plan or proposal. As shown in Figure 6.8 above, four sub-themes

emerged from the model with respect to business planning namely: business plan and feasibility studies, business planning training scheme, industrial work experience and mentorship training scheme. The feasibility study is taught to enable students the ability to analyse and plan the establishment of a business from gathering of resources, location, supplier of labour and business clients.

Participant 6 stressed that:

"Students are given training on key success factors in setting up a business such as feasibility studies."

Participant 1 commented that:

"On the development of proposal, we expose our students to business plan training scheme and mentorship training scheme which involves experienced and successful entrepreneurs from different fields who give training to the students".

Mentorship training is one of the methods of developing entrepreneurial readiness among potential entrepreneur.

Further, other participants also advanced the types of training that are available in acquiring business planning skills. Participant 4 posited that:

"*For you to write a business proposal is not something that is easy, our students undergo some training. Training like mentorship, industrial training works (IT), you need to develop your business proposal very well, it matters a lot. I have some business proposals on my table that were designed by my students".*

Participant 2:

"we have industrial work experience scheme where students are exposed to the reality of what happens outside the academic work. The real-life experience helps to understand the most important content of a business proposal".

The findings suggest that the entrepreneurship training scheme has a link with ESE business planning. The respondents also affirmed that some of the trainings involve entrepreneurs' experience and industrial experience which are practical interventions. Thus, the exit level students have been exposed to translating business opportunities into business plans or proposals. The next phase is the marshalling of resources to actualise all the needs in the

business proposal. Figure 6.9 depicts the responses from the participants on business marshalling.

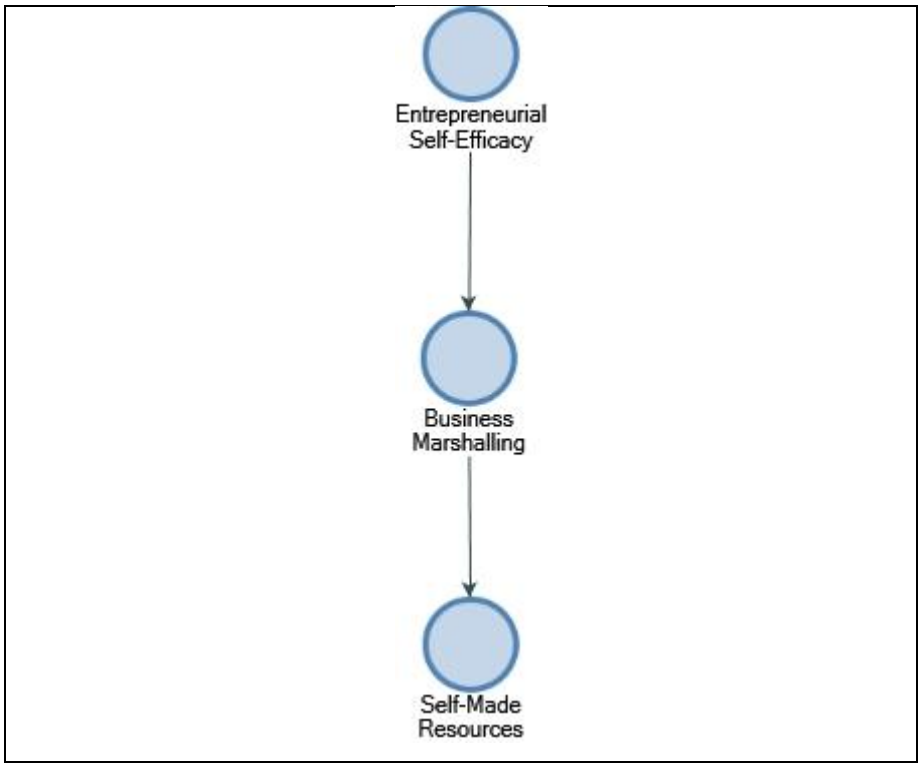

Figure 6. 9 Influence of ESE business marshalling on entrepreneurial readiness
Source: Emerged from NVivo 12 analysis

Business marshalling refers to the gathering of resources to start the business, convincing other people to invest in a business idea and getting them to team up with the business. As shown from the figure above, only one sub-theme emerged from the model. The research question is *'what type of entrepreneurship training is available on putting resources together to start a new business?'*. Unfortunately, no entrepreneurship training is available to address how students can motivate resources. Self-made resources are the only sub-theme that emerged from the participants' responses. Business marshaling refers to the gathering of business resources such as land, funds, customers, and suppliers towards establishing a new business (McGee *et al.*, 2009). According to the participants, self-made resources refer to personal savings of individual student. The students were encouraged to save on their own in order to own a new start-up. Some of the participants stated below.

Participant 6:

"at the initial stage we advise them to have saving culture. So, what they have on their own, what they have been able to achieve through their savings as their own which I refer to as self-made resources is the number one support from friends and family"

Participant 2:

"We have been telling the students right from the onset that ability to save. Every one of the students must cultivate that habit to save from what their parents are giving to them. That will really help them. And they need training on financial management. How would they be able to manage themselves financially?"

Participant 1:

"*many of the students are on their own, we encourage them to save from the money they make to equip themselves. If the government is willing, the students can get support. if the students can get government support in terms of equipment, most of them will create a start-up before leaving the school."*

In reference to government support, one of the participants also comment on the possibility of getting support from the government.

Participant 4:

"There is a program Government of Lagos State put together, and that is called Lagos State Employment Trust Fund. This open the students up for financial assistance in form of loan with minimal interest and with little protocol".

From the foregoing, it is evident that there is no entrepreneurship incubate or training to assist potential entrepreneurs on how to marshal business resources. The self-made resources only try to address the financial aspect of marshalling resources for a new start-up. The exit level students are not exposed to training on how to assemble customers, partners, suppliers, assets etc. Besides, there is no report on students accessing loan from the government's loan scheme which may be due to collateral demands by the governments. Consequently, the students have to rely on family, friends, or self-made resources to motivate the creation of a new business.

The final phase is the implementation of the business plan after gathering of the required business resources. Figure 6.10 below presents the model on the responses from the interviewed participants on ESE business implementing.

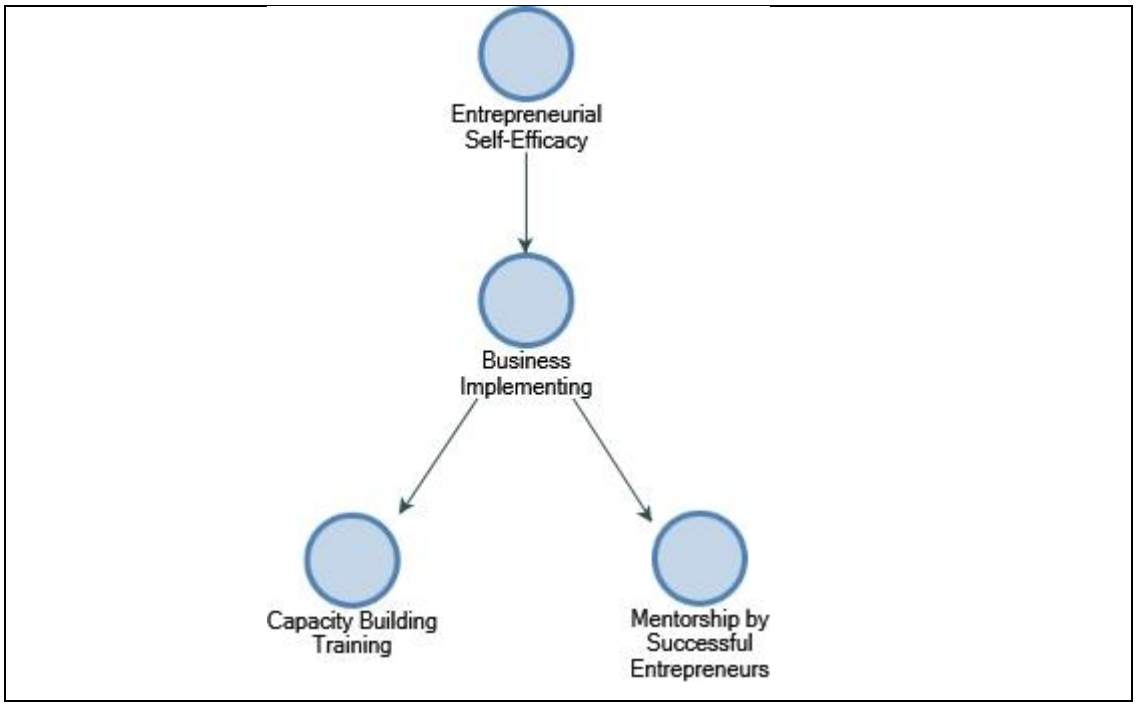

Figure 6. 10: Influence of ESE business implementing on entrepreneurial readiness
Source: Emerged from NVivo 12 Analysis

The implementing phase involves effective management of the business and growing the business successfully (McGee *at al.,* 2009). It encompasses the ability to generate business idea, make business decision, identify market opportunities, manage customers, take business risk, source for funds and think ahead of competitors. The two sub-themes from the model includes capacity building training and mentorship training. According to the participants, these are the two major entrepreneurship trainings that correspond to implementation of new business or starting a new business.

According to Participant 3:

"The intent of everybody is to bring out something new through innovation and creativity. So, we teach our students on innovation and creativity. And we also have what we call Capacity Building Training as well as different form of seminars. Which is to equip them on how to manage various environment and get themselves established".

This assertion was supported by Participant 8:

"We have entrepreneurship training, we have capacity building training for the students as well seminars, we take the students outside to listen to other facilitators on how they can

establish a new business on their own. Once they go through these training, seminars, they will be able to stand independently".

The participants noted that these two trainings are to prepare the students for entrepreneurial action. The students are exposed to successful entrepreneurs from different fields who teach them based on real-life experiences on the processes of establishing a new business and its management. Consequently, all the participants were able to confirm that some of the students are established entrepreneurs. The comments of Participant 2 and 6 represent the general opinion of other participants.

Participant 2:

"So far so good like I have said in response to one of the questions. My students are all over in any field that you can mention, engineering, construction, business, buying and selling, computer works, web designing. They have been able to stand and they have been able to register those business with the Co-operate Affairs Commission. And today, they are standing entrepreneurs that we can boast of".

Participant 6:

"Like I said earlier, in the past years I have been seeing my students in motor mechanic work. They are on their own now. Block laying students, buying and selling business, trading, and web design. I have said earlier on, at least I can point to about ten students that I have known that are on their own. And they are doing well, they are doing well".

From all indication, it can be said that the entrepreneurship training to motivate business implementation is relevant to some extent. This suggests that there is a link between entrepreneurship education and ESE. Some of the graduate students are already entrepreneurs in their respective fields. However, having about ten successful graduate students from over one hundred graduate students in a particular school is very poor, and has a low impact on the students' entrepreneurial readiness. From the foregoing, the relationship between entrepreneurship education and ESE is established, but the influence of ESE on the students' entrepreneurial readiness is weak. Many factors are responsible for the poor level of business start-ups among exit level students at the three selected TVET institutions. Some of these challenges were identified later in this section.

6.10.4 Assessment on Individual Entrepreneurial Orientation (IEO)

This aspect aimed to examine the link between IEO and students' entrepreneurial readiness at the selected TVET institutions. It should be noted that the availability and effective implementation of IEO propensities at the selected TVET institutions suggests a relationship between entrepreneurship education and IEO, while the positive impact on students indicates significance of entrepreneurial readiness. Figure 6.11 below depicts the result from the responses of the participants. It is worthy of note that assessment on risk-taking skills and innovative skills have been analysed under personal entrepreneurial skills in Figure 6.8. However, additional information was gathered in relation to IEO as shown below.

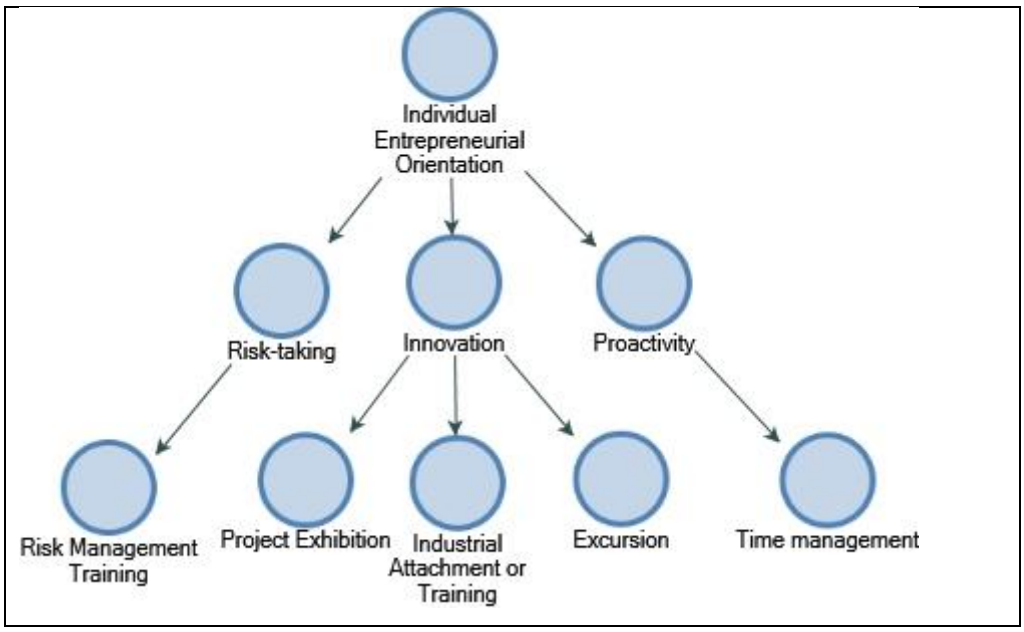

Figure 6. 11: Influence of individual entrepreneurial orientation on entrepreneurial readiness
Source: Emerged from NVivo 12 analysis

Figure 6.11 above shows the three dominant propensities of IEO which include risk-taking, innovativeness and proactivity. The sub-themes that emerged for risk-taking are risk management training and engagement with customers. As discussed in Figure 6.4, students were taught risk management as a topic in entrepreneurship education scheme. However, some of the participants assert that there is no practical training on risk management training due to poor funding. As a result, the training lacks practical implementation.

Participant 3 lamented that:

"*there is no training for students on taking business risk because of the expenses involved."*

This justifies the report of GEM (2013) on young entrepreneurs in Nigeria. The report noted that young entrepreneurs in Nigeria are dissuaded from business when faced with the realities of business challenges. This may stem from the inability to take business risk.

Project exhibition was identified as a way of developing innovative skills among the students. Students are encouraged to develop, design or manufacture a product for exhibition as part of their project assessment. But the cost of getting a project done is a major burden for some of the students particularly the engineering students.

Participant 4 noted that:

"most of the students are self-funded and as such could not finance the cost of the projects towards the workshop exhibition."

Participant 4 was supported by Participant 1 observation:

"the students showcase their innovativeness particularly the electrical engineering students but it is expensive for the students in this field to design or create a remarkable device because they have to buy the device materials themselves before they can assemble the parts together"

In a bid to showcase a product for the workshop exhibition, the self-sponsored students are advised to consider projects that are less expensive which is against the wish of the students. As a result, the students' innovative ideas are hampered due to insufficient funds. This was further affirmed by Participant 1:

"we often advise the electrical engineering students to consider soap making that involves little money for stat-up in order to save money for the bigger project of designing a device in the field of electrical engineering"

The lack of financial support has led to a situation of misplaced objective for some of the students. And this is one of the problems of entrepreneurship development in Nigeria (Kayode & Olorundare, 2014).

Industrial attachment (IT) is a practice whereby students spend some time (6 months) with a specific industry in relation to the students' field to gain industrial experience. Some the respondents noted that the exposure increases innovative ideas and aids the students' industrial skills for self-employment.

Excursion is the last sub-theme on innovative skills. According to the participants, sight-seeing to various locations encourages creativity among the students. The students usually picture in their minds on how to add value to their skills based on what they have seen or witnessed from different companies or industries during the excursion.

There is no specific training on proactivity in business. Time management is described as measure of being proactive, according to some of the respondents. Time management is one of the topics in the entrepreneurship curriculum at the selected TVET institutions. According to Participant 4:

"we teach them how to be punctual in business, and time management is important to plan your business activities".

Based on the above findings, it could be said that entrepreneurship education has a link with IEO particularly with regards to innovative skills. Other aspects of IEO (risk-taking and proactivity) were not effectively implemented according to the entrepreneurship teachers. As a result, IEO has little or no significant effect on the students' entrepreneurial readiness.

6.10.5 Challenges affecting entrepreneurship education at selected TVET institutions

This study identified some challenges affecting entrepreneurship education in Nigeria TVET institutions. Three notable challenges were mentioned by the participants as shown below.

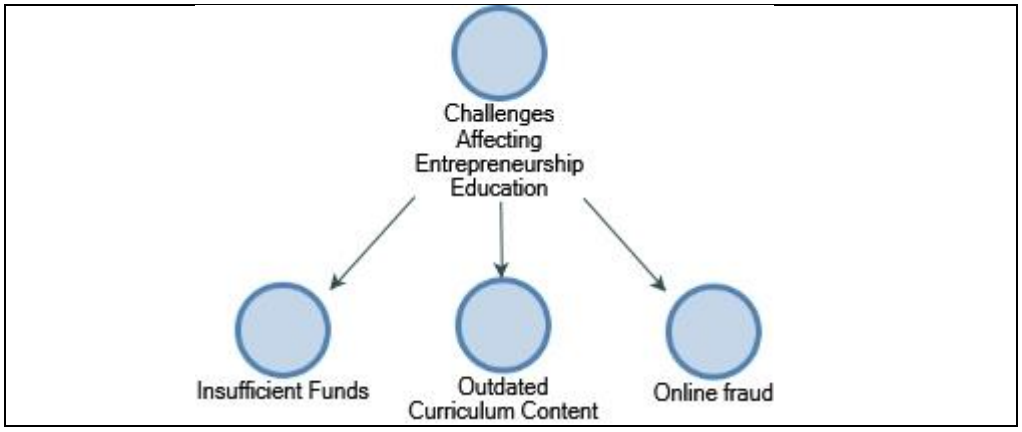

Figure 6.12: Challenges affecting entrepreneurship education at selected TVET institutions in Lagos Metropolis.
Source: Emerged from NVivo 12

The challenges affecting entrepreneurship education at the selected TVET institutions as depicted in Figure 6.12 are insufficient funds, outdated curriculum content and online fraud. Most of the teachers stated that the schools are not getting sufficient support from the government, consequently, the students have to provide the necessary materials or equipment for learning themselves.

According to Participant 1:

"*we don't really get government support, so we encourage the students to save in order to buy equipment to start-up no matter how small."*

This is an indication that the lack of funds is affecting the provision of training equipment for learning at the selected TVET institutions. Another major concern as raised by some of the teachers is that many of the students are self-sponsored and find it difficult to cope with the burden of learning at the selected TVET institutions.

Participant 4 commented that:

"*Some of the students are self-sponsored, they are forced to acquire skills and make a living."*

Participant 6:

"Some of the students go out to seek employment to support themselves in school."

Participant 1 also concurred that:

"many of the students are on their own, we encourage them to save from the money they make to equip themselves. If the government is willing, the students can get support."

The challenge of insufficient funds is really a threat to entrepreneurship development and the future of the students at the selected TVET institutions. The students could not get access to practical trainings such as workshop due to exorbitant cost of training equipment. The school management also look up to the government to make provisions for them since the selected TVET institutions are government establishment.

Outdated curriculum content is another challenge affecting entrepreneurship education at selected TVET institutions in Lagos Metropolis. This study observed that the last time the entrepreneurship curriculum was reviewed for the federal institution was in 2012, 8 years ago and 2017 for the state-owned institutions, 4 years ago, as at the time of this study. Yet, some of the teachers complained that the entrepreneurship curriculum lacks contemporary information to prepare the students for the future of work.

According to Participant 1:

"The entrepreneurship curriculum lacks practical programs. We have told the designers of the curriculum that it is not addressing business confidence or financial management."

The rigorous process of curriculum development may also contribute to the neglect of the feedback from the teachers by the government.

Similarly, Participant 4 supported the comment made by Participant 1 noting that:

"The entrepreneurship curriculum lacks practical activities."

The view of participants 1 and 4 represent the view of other participants at the selected TVET institutions.

Online fraud, popularly known as *"yahoo yahoo"* was identified as a fast and easy way to get rich and this has discouraged many Nigerian youths from being entrepreneurially ready for the future of work.

Participant 4 asserted that:

"our students need to acquire additional skills to be ready for the future of work. Some youths are involved in illegal online fraud. Such as "yahoo yahoo". Most of the students are not entrepreneurially ready".

The Word Cloud 6.13 below reveals some of the concerns raised by the entrepreneurship teachers at the selected TVET institutions. It is largely evident that students training and business are proportionately higher than other issues raised by the teachers, such as skills, management, and entrepreneurship. This implies that the challenge of entrepreneurship training for students on business start-ups is the most repeated challenge reported by the participants. These findings indicated that there is no effective entrepreneurship programmes in place at the selected TVET institutions in Lagos Metropolis. The Word Cloud below illustrates other concerns related to entrepreneurship education at the selected TVET institutions.

Figure 6. 13: Word frequency of issues raised by the respondents
Source: Emerged from NVivo 12

6.11 Chapter summary

This chapter illustrated the quantitative and qualitative data analysis gathered via structured questions and open-ended questions respectively. Descriptive statistics were used to interpret the demographic data. The inferential statistics: Pearson correlation coefficient was adopted to

answer the research questions, and multiple regression was employed to test hypotheses one to three. Objective one, two and three were also examined through data collected from semi-structure interview questions for thematic analysis.

The results of the quantitative analysis for objective one, two and three revealed that there is positive association between EE and entrepreneurial readiness, ESE and entrepreneurial readiness, and IEO and entrepreneurial readiness of the exit level students. Results from the qualitative analysis suggest that there is a link between the early stage of ESE and entrepreneurial readiness. However, responses gathered from the interviewees revealed that there is a relationship between EE and entrepreneurial readiness theoretically but not in practical sense. The next chapter illustrates the extensive discussions of the study findings.

CHAPTER SEVEN

DISCUSSION OF FINDINGS

7.1 INTRODUCTION

This chapter offers discussions concerning analysis of the research findings for both the quantitative and qualitative data as shown earlier in chapter six. This chapter also illustrates if the findings of this study conform or refute the existing claims of other studies. Explanations on the achievement of the research objectives, and the provision of answers to the research questions were also presented in this chapter. The formulated and tested hypotheses in this study allow for the quantitative and qualitative determination of the nexus between entrepreneurship education (EE) and entrepreneurial readiness. The influence of ESE on entrepreneurial readiness was discussed. Also, the influence of IEO on entrepreneurial readiness was also explained.

7.2 Discussion of research findings with regards to the research objectives, questions and hypotheses

The discussion of the research findings aims to synthesise the research objectives, research, questions, and the formulated hypotheses. Pearson coefficient was employed to respond to the research questions. The research hypotheses were tested to establish the research objectives via multiple regression analysis. The discussion of the research findings with regards to the research questions, research objectives, and hypotheses were illustrated below.

7.2.1 Influence of entrepreneurship education on entrepreneurial readiness

Research objective one and hypothesis one (H_1) were formulated to test the influence of EE on entrepreneurial readiness of exit level students at selected TVET institutions in Lagos Metropolis. The result of the quantitative data analysis shows that there is a significant relationship between EE and entrepreneurial readiness. The Pearson coefficient, on the link between EE and entrepreneurial readiness reveals that there is a relationship between EE and entrepreneurial readiness (see Table 6.18). Similarly, the alternative hypothesis (H_1) and research objective one was formulated to determine the influence of EE on entrepreneurial readiness. The outcome of the regression analysis shows that there is (56.8%, $F(3,283) = 124.0.016$, $p<0.0005$) significant influence between EE and entrepreneurial readiness (see Table 6.24). The results from the PPMC and the regression analysis were used to answer research question one and test the alternative hypothesis (H_1) which says entrepreneurship education influences entrepreneurial readiness. Based on this result, the alternative hypothesis

was accepted. This finding is supported by the report of Ab Jalil *et al.* (2016). The authors found that university students' entrepreneurial readiness was influenced toward entrepreneurship activities after entrepreneurship education exposure. Similar findings were demonstrated by Nchu *et al.* (2017), in which entrepreneurial readiness to starting a new business was found among high school students after knowledge and skills gained from entrepreneurship education.

The objective of incorporating entrepreneurship education into the curriculum of the selected TVET institutions is to support the students with basic entrepreneurship trainings and programmes in starting a business and sustaining it to become successful entrepreneurs. However, the dearth of practical entrepreneurial activities is hampering the objective of entrepreneurship education at the selected TVET institutions. The outcome of the qualitative analysis reveals that there is a link between entrepreneurship education and entrepreneurial readiness theoretically. But the students are not entrepreneurially prepared for business creation in the practical sense. Effective entrepreneurial readiness can be achieved if practical entrepreneurial trainings or programmes are infused into the entrepreneurship education. This finding concurs with the assertion of Oviawe and Ekhovbiye, 2008; Onweh *et al.,* 2013) that the problem of entrepreneurship education in Nigeria is lack of essential entrepreneurship programmes. The non-inclusion of practical programmes in the entrepreneurship curriculum informs the poor state of business start-up among the Nigeria youth. This is due to the fact that entrepreneurship education is a skill acquisition intervention that develops practical skills in students (Akhuemonkhan *et al.,* 2013). As noted by some of the participants, the absence of practical entrepreneurship training such as risk management training and financial management training often lead to early collapse of business. Similar critique has been noted in the GEM (2013) report that young entrepreneurs in Nigerian find it difficult to sustain business when faced with real-life challenges

Some of the entrepreneurship teachers complained that the absence of practical training delivery on taking business risk hinders the students' readiness for business start-ups. This is evident in the challenges facing both entrepreneurship education and entrepreneurial readiness as stated by the interview participants. The participants resolved that the exit level students at the selected TVET institutions are not entrepreneurially prepared for business creation.

Inadequate entrepreneurship programmes, and insufficient funding, are some of the challenges facing entrepreneurship education at the selected TVET institutions. These challenges of

entrepreneurship education in Nigeria is not surprising as previous research studies have identified (Oviawe & Ekhovbiye, 2008; Maigida *et al.*, 2013; Okwelle & Deebom, 2017).

7.2.2 The relationship between ESE and entrepreneurial readiness

Research question two examined the influence of ESE on entrepreneurial readiness of the exit level students at the selected TVET institutions. To respond to research question two, PPMC was used to determine the bivariate relationship between ESE and entrepreneurial readiness. The outcome of the PPMC revealed that all the sub-constructs of ESE were significantly associated with entrepreneurial readiness (ESE searching r= 0.636; p<0.0001, ESE planning r=0.638; p<0.0001, ESE marshalling r= 0.620; p<0.0001, ESE implementing r= 0.687; p<0.0001). This result is similar to the findings of Nowiński *et al.* (2019), in which the authors found that entrepreneurship education significantly influences ESE business searching, planning, marshalling and implementing. Also, the significant impact of ESE dimensions toward business startup among students has been affirmed in various literatures (Chen *et al.*, 2008; Pihie & Bagheri, 2011; Setiawan, 2013; Tang *et al.*, 2014).

However, with respect to the regression analysis, ESE marshalling recorded an insignificant correlation with entrepreneurial readiness. This outcome is traceable to the result of the qualitative analysis, which revealed that the students were not exposed to the knowledge of ESE marshalling in reality. The findings of the qualitative analysis revealed that entrepreneurship education positively impact ESE searching, ESE planning, and ESE implementing, but the entrepreneurship education did not address ESE marshalling ability.

This implies that one of the major problems of students' entrepreneurial readiness at the selected TVET institutions is inability to access business resources such as capital, location, customers, suppliers, partners etc. This means that there is no link between entrepreneurship training and ESE marshalling. This outcome confirms the result of the regression analysis, in which, ESE marshalling revealed an insignificant correlation with entrepreneurial readiness (see Table 6.23). This result also buttresses the report of Nwosu *et al.* (2013), which revealed that lack of financial support, human and managerial resources affect SMEs among young entrepreneurs in Nigeria. The findings also justify the empirical result of Mueller and Goic (2003), in which, the authors found that undergraduates students from Croatia lack business marshalling skills compare to their counterparts from the United States. Based on this outcome, research question two has been answered.

Furthermore, the regression analysis revealed that ESE has 52.8% significant association with entrepreneurial readiness which helps to confirm the alternative hypothesis two (H_2) which states that *"ESE has significant influence on entrepreneurial readiness"*. Therefore, alternative hypothesis two (H_2) was accepted. This outcome is consistent with a similar study conducted by Islami *et al.* (2017), in which, the scholars found that a higher self-efficacy can increase entrepreneurship readiness among students of vocational high school in Indonesia. Additionally, Memon *et al.* (2019) found that a strong association exists between ESE and components of entrepreneurial readiness. These findings also concur with the empirical report of Dardiri *et al.* (2019), which confirmed that self-efficacy is a strong motivator of entrepreneurship readiness in the age of 4th Industrial Revolution.

7.2.3 Relationship between IEO and entrepreneurial readiness

Hypothesis three (H_3) and objective three were constructed to determine the interplay between IEO and entrepreneurial readiness. The result of the PPMC was applied in answering the research question which revealed that IEO has positive and significant relationship with entrepreneurial readiness. The bivariate correlation between IEO propensities and entrepreneurial readiness showed that risk-taking ($r= 0.334$, $p<0.0001$), innovation ($r= 0.415$, $p<0.0001$), and proactivity $r= 0.456$, $p<0.0001$ were positive. It is worthy of note, that risk-taking recorded a very low score despite its positive significance. This confirms the genuineness of the qualitative report, in which poor delivery of risk management training was identified as one of the hinderances to business sustainability. Risk-taking skills has been described as the practice of business decision-making process (Bolton & Lane, 2012). This result is affirmed by the findings of Wennberg *et al.* (2013), in which the authors demonstrated that risk-taking is strongly associated with venture creation and the aversion of risk hinders entrepreneurial activities. Further, findings from this analysis confirmed the report of Ebrahim and Schott (2014), in which, the authors identified risk-taking propensity as a predictor of entrepreneurial readiness. Besides, Olajide (2015) once stated that lack of risk-taking skill is one of the challenges students encountered in starting a new business in Nigeria.

In similar vein, the multiple regression analysis was applied to test hypothesis three (H_3) which states that "*IEO has influence on entrepreneurial readiness"*. The result of the regression model showed that IEO was able to explain 23.4% variation in entrepreneurial readiness, and statistically significant at $F (3.284) = 28.985$, $p<0.0005$ on the aggregate. Therefore, the alternative hypothesis which states that *IEO has influence on entrepreneurial readiness* is

accepted, and this outcome has been able to give response to the research question and the research objective was achieved. This finding buttressed the outcome from the study conducted by Braum and Nassif (2019), in which, the authors empirically demonstrated that IEO positively influences entrepreneurial readiness. In a related study, Robinson and Stubberud (2014) discovered that there is increased inclination towards entrepreneurship start-up among students from Norway and America. The authors empirically found that risk-taking skills, innovative skills and proactive skills of the students were influenced after a post-test entrepreneurship training. In Nigeria, risk-taking propensity and innovative skills have been found to influence interest in business creation among Nigerian students (Ramoni, 2015).

7.3 Comparison of the quantitative and qualitative findings

The results of the quantitative and qualitative analysis for objective one and two revealed some areas of triangulation.

7.3.1 Relationship between entrepreneurship education and entrepreneurial readiness.

The relationship between EE and entrepreneurial readiness was examined by hypothesis one. The outcome of the quantitative and qualitative data analysis revealed some areas of agreement. The result of the quantitative data analysis showed that there is a significant relationship between entrepreneurship education and entrepreneurial readiness. The Pearson correlation coefficient and regression analysis revealed that there is a positive and significant relationship between EE and entrepreneurial readiness (see Table 6.18). Similarly, the alternative hypothesis (H_1) and research objective one was formulated to determine the influence of EE on entrepreneurial readiness. The outcome of the regression analysis shows that there is (56.8%, F (3,283) = 124.0.016, $p<0.0005$) significant association between EE and entrepreneurial readiness (see Table 6.24). The results from the PPMC and the regression analysis were used to answer research question one and test the alternative hypothesis (H_1) which says "*entrepreneurship education will influence entrepreneurial readiness"*. Based on the outcome of the analysis, the alternative hypothesis was accepted.

In the same vein, the qualitative data analysis illustrated that there is a link between EE and entrepreneurial readiness theoretically but not in practice. The outcome of the qualitative analysis reveals that the selected TVET institutions made provision for entrepreneurship education scheme of work. The pairs of entrepreneurship education (business management skills, personal skills and technical skills) are embedded in the entrepreneurship curriculum. However, some of the participants noted that poor financial management skills and absence of

practical training on taking business risk hinders the students' readiness for business start-ups. The participants concluded that the exit level students at the selected TVET institutions are not entrepreneurially prepared for business creation due to the myriads of challenges facing entrepreneurship education in Nigeria. This is in agreement with Pihie and Bagheri (2010) that students may not have sufficient interest to venture into business due to business challenges.

7.3.2 Relationship between ESE and entrepreneurial readiness

The relationship between ESE and entrepreneurial readiness was tested by hypothesis two. The quantitative analysis reveals that a significant relationship exists between ESE and entrepreneurial readiness (see Table 6.19 and Table 6.25). The qualitative analysis also shows that there is a link between ESE and entrepreneurial readiness. Apart from ESE marshaling, other components of ESE show significant impact on the students' entrepreneurial readiness. According to the participants, the students were able to identified business opportunities (ESE searching), develop business proposals (ESE planning) and few of them were able to start a business on their own (ESE implementing).

However, there was no entrepreneurship training for ESE business marshalling. The students were not exposed to the entrepreneurship knowledge of gathering business resources such as target market, customers, employees, partners, location and capital. Rather, the students were encouraged to rely on self-made resources or family support to be able to initiate a start-up. This outcome is consistent with the regression analysis report (see Table 6.23). The absence of business resources management training may inform the poor level of business start-ups (Goic & Muller, 2003) among the exit level students at the selected TVET institutions. This shows that ESE has significant effect on entrepreneurial readiness at the early stage of the ESE components, but not significant at the latter stage. This report buttressed the empirical findings of Barbosa *et al.* (2007), where the authors found that students showed individual differences at different levels of the ESE stages. The authors argued that there is need to study individual's ESE stages to determine the specific stage of skills demand. Among the six dimensions of ESE, Setiawan (2014) empirically found that the ESE dimension of coping with unexpected challenges is low among university students in Malaysia. Pihie and Bagheri, (2011) stressed the need to improve the self-esteem behaviour and self-confidence of students to become successful entrepreneurs.

7.3.3 Relationship between IEO and entrepreneurial readiness

Research question three and hypothesis three were formulated to test the impact of IEO on entrepreneurial readiness. The outcome of the bivariate analysis and the multiple regressions analysis show that a positive and significant association exists between IEO and entrepreneurial readiness (see Table 6.20 and Table 6.25). The qualitative analysis expresses the impact of project exhibition and industrial attachment on the students' innovative skills. Reports from the participants suggest that innovative skills are developed through exhibition of projects which includes students from different TVET colleges in Lagos State. But the development of the innovative skills is also hampered by lack of funding. This is judging from the fact that some of the students (in engineering) were not able to fund the cost of developing a project or device for the exhibition. As a result, these students are advised to go into soap making or manufacturing of insecticides that are less costly which is a case of misplaced objective. Further, proactivity is expressed in terms of time management rather than being ahead of competitors. Therefore, the qualitative analysis suggests that there is no significant link between IEO and entrepreneurial readiness in practical sense.

7.4 Validation of the adopted theoretical framework

This section provides the justification of the adopted theories with respect to the research findings of the study. The human capital theory and Kolb's experiential learning theory provide the platform for the research findings on the influence of EE on entrepreneurial readiness. The theory of planned behaviour was reasonable to explain the relationship between entrepreneurial self-efficacy and entrepreneurial readiness. The justification of the theoretical framework is illustrated below.

7.4.1 Influence of entrepreneurship education on entrepreneurial readiness

The results from this study are in tandem with the human capital theory (Becker, 1964; Schultz, 1971; Sakamota & Powers, 1995), and Kolb's experiential learning theory (Kolb, 1984; Healey & Jenkins, 2000; Bell, 2015). The human capital theory suggests that human capital development is a function of knowledge and skills which are acquired through education, and education is the basis for economic growth and sustainability (Becker, 1964). This acquisition of knowledge through education is regarded as the basis for self-independence or financial freedom. Entrepreneurship education is considered as the drive to economic development (Fayolle, 2013; Herrington & Coduras, 2019). Further, entrepreneurship education develops

entrepreneurial mindset geared towards idea generation and business growth (European Commission, 2012).

In relation to the human capital theory, the acquisition of entrepreneurship skills and knowledge through entrepreneurship education promotes self-employment and venture creation. This study found that entrepreneurship education is a determinant of entrepreneurial readiness of exit level students at the three selected TVET institutions. The theory suggests that the acquisition of business management skills, technical skills and personal entrepreneurial skills will increase entrepreneurial preparedness for successful business venture (Elmuti *et al.*, 2012; OECD, 2014; Almarhea & Sarea, 2018). In other words, successful business venture helps to reduce unemployment and poverty particularly among the youth.

The outcome of the qualitative study also aligns with the Kolb's experiential learning theory. The findings suggest that experiential learning via concrete experience, active experimentation, reflective observation, and abstract conceptualisation can aid self-development of entrepreneurship skills (Healy & Jenkins, 2000; Bell, 2015). This study confirms that the curriculum content of entrepreneurship education at the three selected TVET institutions is deficient in practical translation or application to real-life situations. This is in line with the position of Ayatse (2013) that there is lack of connection between entrepreneurship education and entrepreneurship practice. Bell (2015) argued that students have better understanding through learning by doing. The concept of experiential learning conceived that the learning styles of students differs and entrepreneurship training must address their interest in relation to their various disciplines (Kolb, 1984). Studies have suggested that entrepreneurship education must focus on effective practical trainings through active experiential learning (Lackéus & Middleton, 2013; Lame & Yusoff, 2013; Fayolle, 2013; Anele *et al.*, 2014).

7.4.2 The relationship between ESE and entrepreneurial readiness

The outcome from the quantitative analysis on the influence of ESE on students' entrepreneurial readiness supports the theory of planned behaviour. This theory has been helpful in the study of human behaviour by predicting intentions or actions as influenced by some underlying assumptions (Ajzen, 1991) especially in the field of entrepreneurship (Kautonen *et al.*, 2013). According to Ajzen, these assumptions are attitude towards the behaviour, subjective norms and perceived control. The theory of planned behaviour can be aligned with ESE task-specific ability (Liñán, *et al.*, 2011) as a determinant of students' entrepreneurial readiness. Just like the theory of planned behaviour, ESE task-specific concept

is a planned process of becoming a nascent entrepreneur, and each task-specific phase varies in terms of influence (Mueller & Goic, 2003). The theory of planned behaviour values the ability of an individual to perform a given task, which makes the theory a best fit to explain the multi-dimensional nature of ESE task-specific at each phase (McGee *et al.*, 2009).

Drnovsek *et al.* (2010) believed that in creating a new start-up, ESE is a vital factor in increasing the possibility of venture creation activity. ESE refers to the entrepreneurial confidence an individual has to own a business. The findings of this study show that ESE has significant influence on students' entrepreneurial readiness towards venture creation. Some variance exists between the four phases of ESE (ESE searching, ESE planning, ESE marshalling, and ESE implementing) towards entrepreneurial readiness. The result supports the report of Barbosa *et al.* (2007). The authors examined the relationship between cognitive styles and four task-specific types of ESE—opportunity-identification self-efficacy, relationship self-efficacy, managerial self-efficacy, and tolerance self-efficacy. The authors noted that the various dimensions of self-efficacy may have individual and unequal relationships to multiple dependent variables, specifically entrepreneurial intentions and nascent behaviour.

The attitude towards behaviour, subjective norm, and perceived control over entrepreneurial action play major role to determine behavioural pattern of an individual. Ajzen (1991) posited that perceived behavioural control is most compatible with perceived self-efficacy which motivates behavioural actions. Perceived behavioural control is the ease or impossibility of performing an action (Ajzen, 2002). With respect to the triangulation alignment from the quantitative and qualitative outcome between ESE and entrepreneurial readiness, the perceived behavioural control of the students proved unfavourable at the stage of ESE marshalling due to inaccessible business resources. The ability to execute a business plan is a function of available resources which informs favourable perceived control. The low perceived control of the students could be traced to the entrepreneurially-hostile environment in Nigeria in terms of poor credit support for small medium enterprise and excessive importation of goods. As a result, some of the students had to rely on family support (subjective norm) to initiate a new business. The theory of planned behaviour lays the foundation to comprehend the relationship that occurs between ESE and entrepreneurial readiness.

7.5 Chapter summary

This chapter provided an extensive discussion in tandem with the research questions, research objectives and hypotheses. The formation of the discussion of findings was built on the outcome of the quantitative analysis. The composition of the research findings demonstrated that a significant and positive association exist between EE and students' entrepreneurial readiness. Similarly, a significant association was found between ESE and entrepreneurial readiness, although, variation was observed at the marshalling phase of ESE. In the same vein, a significant link was observed between IEO and entrepreneurial readiness. This study also justified the usefulness of the theoretical frameworks to the research findings in details.

The composition in the next chapter focused on the summary, conclusion and recommendations of this research study.

CHAPTER EIGHT

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

8.1 INTRODUCTION

This research study is aimed at examining psychosocial determinants of entrepreneurial readiness at three selected TVET institutions in Lagos Metropolis, Nigeria. Various aspects of entrepreneurship education (EE) were examined globally. Among the objective of this study was to determine the influence of EE, ESE and IEO on entrepreneurial readiness (ER). The outcomes of these findings were useful in proposing a conceptual framework of EE towards ER. EE frameworks for skills development were also illustrated contextually. Three hypotheses were formulated and tested. Evidently, this study was able to align the research hypotheses with the research questions and research objectives. Pearson coefficient was adopted to provide answers to the research questions. The multiple regression analysis was conducted to assess the three research hypotheses.

This chapter presents the conclusion and summary of the research findings as demonstrated through the outcome of the quantitative and qualitative analysis. The mixed-method approach was adopted to remove bias and allow for valid generalisability of findings. The proposed conceptual framework, chapter summary, research recommendations and limitations of study were also discussed in this chapter.

8.2 Chapters summary

Chapter one of this research study examined the introduction of entrepreneurship and entrepreneurship education as the drive for economic development. The background of the study, the research problem, research objectives, and research questions were also discussed. The justification of the study, contribution to knowledge, scope of the study and the research methodology were also presented in this chapter. Chapter one ended with the limitations of the study and the thesis structure.

Chapter Two started with the research context on the development of entrepreneurship education from a global perspective to the Nigerian context. The nature of unemployment and EE in Nigeria; historical development of entrepreneurship and EE in Nigeria were examined and the need for entrepreneurship skills was discussed. Chapter Two concluded with explanations on the emergence of the 4^{th} Industrial Revolution and its impact on entrepreneurship education in Nigeria.

Chapter Three explores the conceptual and theoretical frameworks of the research. Literature reviews on EE, ESE, IEO and ER were explored. The theoretical frameworks of this study were articulated with the conceptual model as proposed in this study. Chapter Three also presented the research hypotheses in relation to the research objectives and research questions.

Chapter Four started with the concepts of TVET, the global view of TVET in developed and developing countries were also illustrated. Related literatures on the integration of TVET and entrepreneurship education were explored globally. Also, the current situation of entrepreneurship education at selected TVET institutions were investigated, as well as government interventions on TVET and education in Nigeria. Lastly, entrepreneurship pedagogy and vocational pedagogy in Nigeria were also discussed.

Chapter Five focused on the research methodology employed in achieving the research objectives, which was sustained by the research onion of Saunders *et al.* (2009). The research onion was explored from the outer layer by discussing the various research philosophies and the pragmatist position was considered as the appropriate philosophical paradigm for this study. Research approaches such as inductive, deductive and abductive approaches were examined, and mixed method approach was adopted for this study. Research strategies, which include survey research, case study design, were all discussed before considering case study research for this study. The target population and various sampling techniques were explored. Measurement of research instruments and the rating scale to measure responses were also presented. Research methods for quantitative and qualitative data collection and analysis were explained in Chapter Five.

Data analysis and interpretation of results were discussed in Chapter Six. Descriptive statistics was used to interpret the demographic section of the survey questionnaire. Pearson Moment Correlation was used to provide responses to the research questions, and regression analysis, which was used to test the research hypotheses and achieve the research objectives were also presented. Additionally, the analysis of the qualitative data using NVivo 12 was illustrated, and triangulation of the outcome for quantitative and qualitative data analysis were also presented.

Discussion on the findings of quantitative and qualitative analysis were presented in Chapter Seven. A detailed explanation as regard the influence of EE, ESE and IEO on exit level students' entrepreneurial readiness, at the selected TVET institutions were presented under the discussion of findings in Chapter Seven.

Chapter eight focused on the summary of findings, conclusions and recommendations. Justification for the proposed conceptual framework was also presented in this chapter.

8.3 Summary of findings from the quantitative data analysis

8.3.1 Research objective one

The research findings as presented in Chapter six revealed the association between research constructs and sub-constructs. The research findings from research objective one, using the PPMC statistical tool indicated that there is a significant association between EE and entrepreneurial readiness. This suggests that EE sub-constructs such as technical skills, business management skills and personal entrepreneurial skills that are being taught at the selected TVET institutions have significant impact on the exit level students' entrepreneurial readiness for venture creation. Additionally, the results of the regression analysis conducted to validate the alternative hypothesis one revealed that there is positive but no significant relationship between technical skills $\beta=$ .084, $t(286) = 1.140$, $p > 0.05$) and entrepreneurial readiness. However, the other sub-constructs of EE, business management skills $\beta=$ .399, $t(286) = 5.096$, $p = < 0.05$) and personal entrepreneurial skills $\beta=$ .316, $t(286) = 4.395$, $p = < 0.05$) significantly influence entrepreneurial readiness. As a result of this outcome, the research alternative hypothesis one was accepted and research objective one was established. These empirical findings validate the report of the OECD (2014), Elmuti *et al.* (2012) and Henry *et al.* (2005) that technical skills, business management skills and personal entrepreneurial skills are the crucial entrepreneurial skills for entrepreneurship success.

8.3.2 Research objective two

The influence of ESE on entrepreneurial readiness was stated as objective two. The Pearson correlation statistical tool was employed to answer research question two and achieve objective two. The test conducted revealed that a positive and significant association exist between all the components of ESE and entrepreneurial readiness (searching $r = 0.636$, $N = 288$, $p<0.001$, ESE business planning $r = 0.638$, $N = 288$, $p<0.001$, ESE business marshalling $r = 0.620$, $N = 288$, $p<0.001$, and ESE business implementing $r = 0.687$, $N = 288$, $p<0.001$). Also, the regression analysis revealed that ESE phases significantly predict entrepreneurial readiness. While other ESE components revealed significant relationship with entrepreneurial readiness (searching $\beta=$ .186, $t(287) = 2.764$, $p>0.05$, ESE planning $\beta=$ .149, $t(287) = 2.099$, $p>0.05$ and ESE implementing $\beta=$ .339, $t(287) = 4.602$, $p<0.05$), ESE marshalling $\beta=$ .131, $t(287) = 1.953$, $p>0.05$) revealed an insignificant correlation with entrepreneurial readiness . These

results findings affirmed the submission of Barbosa *et al.* (2007), in which the authors argued that the underlying dimensions of ESE varies with individuals and relationships with dependent variables may differ. This justifies the necessity of conducting this research, as it is important to identify the specific phase of individual ESE that requires training needs (McGee *et al.*, 2009).

8.3.3 Research objective three

Another research finding between IEO and entrepreneurial readiness indicated a positive and significant association between all the sub-constructs of IEO (risk-taking $r= 0.334$, $p<0.0001$, innovation ($r= 0.415$, $p<0.0001$), and proactivity $r= 0.456$, $p<0.0001$) and entrepreneurial readiness. The regression analysis was conducted to test Hypothesis three. The findings established that innovativeness $\beta= 0.168$, $t (287) = 2.200$, $p<0.05$ and proactiveness $\beta= 0.291$, $t (287) = 3.745$, $p<0.05$ were significantly correlated with entrepreneurial readiness. However, the standardised beta value for risk-taking $\beta= 0.116$, $t (287) =1.769$, $p>0.05$ revealed an insignificant relationship with entrepreneurial readiness. These findings further revealed the need to address risk-taking training in EE at the selected TVET institutions in Lagos Metropolis, Nigeria.

8.4 Summary of findings from the qualitative data analysis

8.4.1 Research objective one

The qualitative data were gathered through in-depth interviews. The interview questions were categorised according to the independent variables (EE, ESE and IEO), as well as their sub-constructs. The interview questions were basically on the available trainings on EE, ESE and IEO, towards entrepreneurial readiness at the selected TVET institutions in Lagos Metropolis, Nigeria. NVivo 12 software was used to code the data and generate themes and sub-themes under each sub-construct. Three themes were generated for EE which includes business management skills, personal entrepreneurial skills and technical skills. These skills have been argued to be the key components of EE (OECD, 2014; Elmuti *et al.*, 2012).

Findings from the qualitative data revealed that EE is part of the scheme of work at the selected TVET institutions in Lagos Metropolis, Nigeria. The three sub-constructs of EE are business management skills, personal entrepreneurial skills and technical skills. The acquisition of business management skills at the selected TVET institutions as emerged from the NVivo 12 analysis were through teaching on customer relationship, decision making and financial management. Personal entrepreneurial skills were acquired through exhibition of innovative

products by the students and teaching on risk management. Furthermore, the teaching on communication skills and exposure to industrial task were the methods of impacting technical skills at the selected TVET institutions. However, the findings of the qualitative data analysis on the relationship between EE and entrepreneurial readiness shows theoretical significance but lacks practical significance. This is as a result of the low practical translation of the entrepreneurship curriculum content at the selected TVET institutions. This finding is contrary to the outcome of the quantitative analysis.

8.4.2 Research objective two

As regards the influence of Entrepreneurial self-efficacy (ESE) on exit level students' entrepreneurial readiness, ESE was categorised into four themes (searching, planning, marshalling and implementing), and interview questions were asked according to the available trainings in line with the themes. Three sub-constructs emerged for ESE searching which includes business study skills training, seminars and entrepreneurship training. Business study is taught as a topic and the schools organise seminars which were facilitated by local entrepreneurs. These trainings were recognised to help students identify business opportunities or develop business ideas which is the key component of ESE searching. The four sub-themes that emerged for ESE planning were business plan and feasibility studies, business planning training scheme, industrial work experience and mentorship training scheme. Business plan and feasibility studies and business planning training scheme were taught as subjects, while industrial work experience is an internship training at specific industry in relation to the students' disciplines. Mentorship training involves teachers-students engagement through seminars to share ideas on developing business plans.

Self-made resource was the sub-theme that emerged for ESE marshalling. Self-made resource is the concept used by the entrepreneurship teachers at the selected TVET institutions to indicate students' ability to save for business star-up. This indicates that there is no entrepreneurship training or teaching on how to acquire skills for gathering business resources. Due to poor financial support for nascent entrepreneurs in Nigeria, TVET students are advised to maintain financial saving habit from what their parents give to them toward starting a business before or after graduation. The two sub-themes that emerged for ESE implementing were mentorship by successful entrepreneurs and capacity building training. Mentorship by successful entrepreneurs involves engaging successful entrepreneurs from different fields to share life experiences on business establishment and management. Capacity building training

is a form of seminar in which students are taught by external entrepreneurship facilitators on how to start a new business independently.

These findings are in alignment with the quantitative report which indicates that there is a significant relationship between ESE and entrepreneurial readiness. However, ESE marshalling revealed a non-significant relationship with the students' entrepreneurial readiness.

8.4.3 Research objective three

On the impact of IEO on entrepreneurial readiness of exit level students at the selected TVET institutions, the sub-theme that emerged for IEO risk-taking was risk management training. Risk management training is taught as a topic from the entrepreneurship scheme of work. According to the entrepreneurship teachers at the selected TVET institutions, students do not have any practical or real-life training on how to take business risk such as simulation, role play etc. Consequently, the impact of IEO risk-taking on students' entrepreneurial readiness was not practically significant. This finding aligns with the quantitative analysis (see Table 6.26). This may inform the low business start-ups among graduates of TVET institutions (Fagge, 2017). Three sub-themes that emerged for IEO innovation were project exhibition, industrial attachment or training and excursion. In developing students' innovative skills, the selected TVET institutions organise project exhibition day for students to showcase their innovative skills through manufacturing of households' products, design or creation of mechanical devices, fabric designs, art designs etc. This is done as part of the students' assessment for grades. However, some of the students, particularly the engineering students are faced with financial challenges in completing the project exhibition task. This is due to the high cost of engineering equipment and materials for project design. As a result, the engineering students were advised to go into soap making or manufacturing of insecticides and perfumes which is a case of misplaced objective. With regards to industrial training, the students are attached to some industries related to their fields for the acquisition of industrial skills. This practice has enabled some of the students to become self-employed, while some have been employed by these industries. Excursion was the last sub-theme on IEO innovative skills. The selected TVET institutions organise excursion trips for sight-seeing to aid the students' cognitive skills toward innovative skills. Furthermore, time management was the only sub-theme that emerged for proactivity as there were no specific training on proactivity. Time management is taught as a topic from the entrepreneurship curriculum, and it is about efficient use of time in completing a task.

Based on these findings, it is evident that the current EE scheme at the selected TVET institutions in Lagos Metropolis, Nigeria, does not practically impact the IEO postures on students' entrepreneurial readiness. The entrepreneurship curriculum does not provide for effective risk management training and proactivity training. While IEO innovative and IEO proactivity showed some level of significant impact on the students' entrepreneurial readiness, IEO risk-taking was not significant with the students' entrepreneurial readiness. These findings are in line with the quantitative analysis (see Table 6.33).

8.4.4 Challenges of entrepreneurship education

The sub-themes that emerged on the challenges of EE at the selected TVET institutions include insufficient funds, outdated curriculum content and online fraud. Some of the respondents complained that the schools are not getting sufficient financial support from the government to equip the school laboratories for practical trainings. Also, the entrepreneurship curriculum is said to be outdated as it does not address some entrepreneurship training programmes. Lastly, online fraud is the last sub-theme that emerged on the challenges of EE at the selected TVET institutions. Online fraud has become rampant among the youth in Nigeria. It is predominantly the quickest but dubious way of making money. This common practice had discouraged many youths from acquiring entrepreneurship skills for business start-ups.

8.5 General summary

This study examined psychosocial determinants of entrepreneurial readiness and also proposed a conceptual framework of entrepreneurship education for TVET institutions in Nigeria. The proposed conceptual model presents the constructs which include EE, ESE, IEO and entrepreneurial readiness. These constructs were measured and empirically tested. Extant literatures have shown that EE is essential for the development of entrepreneurship skills to become successful entrepreneurs (Elmuti *et al,* 2012; Maritz *et al,* 2010; Almarhy & Sarea, 2018). The human capital theory stated that the acquisition of cognitive knowledge impacts economic development which in turns increases the stock of value of individuals. This study demonstrates the interactions between psychosocial determinants of entrepreneurial readiness at selected TVET institutions in Lagos Metropolis, Nigeria.

With regards to the tested hypotheses and research findings, EE, ESE and IEO were recommended as determinants of entrepreneurial readiness towards business creation. Secondly, the model presented in Figure 8.1 below is recommended as conceptual framework of entrepreneurship education for entrepreneurial readiness.

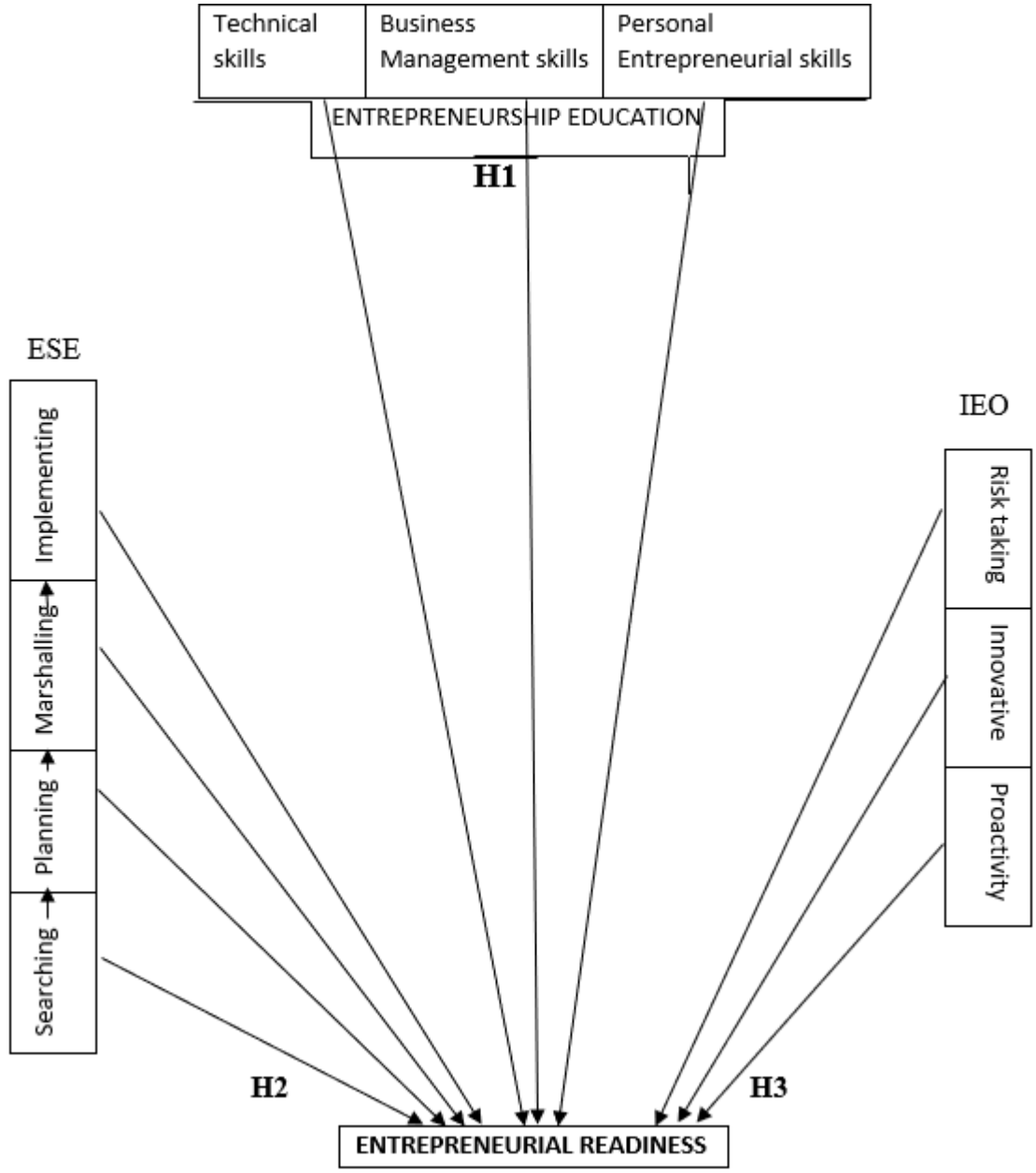

Figure 8. 1: Conceptual framework of entrepreneurship education

Source: Author's compilation

Figure 8.1 depicts how EE sub-constructs (technical skills, business management skills and personal entrepreneurial skills) impact students' entrepreneurial readiness for the future of work. Besides, there is need to comprehend the specific phase(s) of ESE that can stimulate individual student's entrepreneurial readiness for business start-up. Additionally, the IEO postures (risk-taking, innovativeness and proactivity) were aimed at addressing students' business orientation to increase the rate of student entrepreneurs, which informs the link between IEO and entrepreneurial readiness. Furthermore, there is need for EE to identify and

address specific phase of students' ESE strength and weakness (Barbosa *et al*, 2007) which is a key concern for TVET institutions. Lastly, the effectiveness of EE should identify individual student's entrepreneurial orientation to determine key areas of curriculum focus (Koe, 2016) particularly at TVET institutions in Lagos, Nigeria.

The model in Figure 8.1 is recommended based on the empirical findings from this study, which was indicated from the Pearson Correlation Coefficient and the standardised regression coefficient values. These empirical findings revealed that EE significantly impacts entrepreneurial readiness.

8.6 Conclusion

This study examined psychosocial determinants of entrepreneurial readiness in three selected TVET institutions in Lagos, Nigeria. Research questions were answered through the application of Pearson Moment Correlation Coefficient. Three hypotheses were formulated and tested through multiple regression model. The conclusions drawn from the tested hypotheses were provided below.

8.6.1 Conclusion one

The result of the regression analysis revealed that apart from technical skills, all components of EE has significant influence on entrepreneurial readiness. This study findings revealed that entrepreneurship education scheme of work at the selected TVET institutions is limited in scope due to the poor integration of technical skills. The components of technical skills are written and oral communication, problem-solving skills and organising skills. Although, communication is captured in the entrepreneurship studies, but problem-solving skills and organising skills were not available or implemented. This affirms the reason why technical skills did not have a significant link with the students' entrepreneurial readiness. Based on this outcome, objective one which aimed to examine the influence of EE on students' entrepreneurial readiness was established.

8.6.2 Conclusion two

The second hypothesis was tested to determine the influence of ESE on students' entrepreneurial readiness. The result of the regression analysis revealed that the students lack the marshalling skills to assemble business resources for venture creation. However, the students demonstrated the ability to identify business opportunities, develop business proposals

and execute business plans. These findings align with the alternative hypothesis two and research objective two was achieved.

8.6.3 Conclusion three

Hypothesis three was tested to determine the relationship between IEO and students' entrepreneurial readiness. The result of the regression analysis indicated that IEO risk-taking is not significant with the students' entrepreneurial readiness, and this could be traced to the lack of practical translation of risk-taking training. However, IEO innovation and IEO proactivity showed significant relationship with entrepreneurial readiness. This shows that IEO is a predictor of students' entrepreneurial readiness. Based on this outcome, alternative hypothesis was accepted and research objective three was established.

8.7 General conclusion

TVET institutions were established for the purpose of skills acquisition for self-employment and job creation. But the low business start-ups among the graduates of TVET institutions in Nigeria negates against the objectives of establishing TVET institutions (Fagge, 2017). Despite government interventions, the unemployment curve among the youth remains upward. Despite these challenges, entrepreneurship education is globally recognised as the drive for self-employment and job creation. This suggests the need to identify determinants of entrepreneurial readiness for business creation among exit level students at selected TVET institutions in Lagos Metropolis, Nigeria. This research study provided an insight into different aspects of entrepreneurship skills for entrepreneurial readiness and venture creation. This was achieved through empirical validation of the proposed model for entrepreneurship education. Responses were given to the research questions using Pearson Coefficient. Multiple regression analysis was useful in testing the hypotheses and achieving the research objectives. A significant relationship was established between EE and entrepreneurial readiness which implies that EE is a determinant of entrepreneurial readiness. In contrast, the outcome of the regression analysis indicated that technical skills show insignificant association with entrepreneurial readiness. Additionally, ESE also predicted the students' entrepreneurial readiness, although ESE marshalling was insignificant. Furthermore, while IEO innovation and IEO proactivity significantly impact the students' entrepreneurial readiness, IEO risk-taking did not. This research study proposed a conceptual framework of entrepreneurship education to determine entrepreneurial readiness among students of TVET institutions in Lagos, Nigeria.

8.8 Recommendations

This study aimed at examining the psychosocial determinants of entrepreneurial readiness towards venture creation. This study, through extensive literature reviews justified the research constructs (EE, ESE and IEO) as key components of entrepreneurial success. Based on the outcomes of this study, the following recommendations are made below:

8.8.1 Recommendation one

Entrepreneurship education is the dynamic catalyst for economic growth and development. This supports the assumption of the human capital theory, that investment in education triggers increase in income and economic value. The impact of EE on ER as revealed by the quantitative analysis indicated the need to integrate business management skills, technical skills and personal entrepreneurial skills with entrepreneurship scheme of work in the selected TVET institutions, Lagos Metropolis. For emphasis, it is noted that problem-solving skills which are components of technical skills are missing from the entrepreneurship scheme in the selected TVET institutions (see Table 3.2). This observation supports the empirical findings of the non-significant relationship between technical skills and students' ER (see Table 6.24). Lack of problem-solving skills may be the cause of early business collapse among the youth, given that business challenges usually occur within the first five years of business maturity. This study also recommends the inclusion of real-life entrepreneurship programmes such as incubate for start-ups support and local entrepreneurship hubs. This is due to the fact that more than 90 percent of the current entrepreneurship subjects are delivered theoretically (see Table 3.2). It is worthy of note that entrepreneurship is action oriented.

8.8.2 Recommendation two

The research findings indicated that ESE significantly influenced ER at the selected TVET institutions. Identification of business opportunities (ESE searching), business plan (ESE planning) and implementation of a new start-up (ESE implementing) are key contributors to the students' ER. However, ESE marshalling does not have significant impact on ER. This revealed that there is lack of skills to gather economic resources for business start-up among the students. This informs the need to develop entrepreneurship trainings on raising business funds, acquiring business space, creating business partners, gathering employees, and identifying customers. The aforementioned skills are critical to the growth and survival of any business. Also, topics on how to gather business resources should be included in the EE scheme of work.

8.8.3 Recommendation three

This research findings statistically confirms the significant influence of IEO on ER. The acquisition of risk-taking skills, innovative skills and proactive skills can increase student entrepreneurs at TVET institutions in Nigeria. IEO innovation and IEO proactivity showed significant effect with students' ER. But IEO risk-taking revealed an insignificant relationship with students' ER. Risk-taking is an attribute of successful entrepreneurs without which entrepreneurship entry may be hindered. It is recommended that risk management training should involve workshop programmes such as computer-based simulation trainings, real-life incubate on spin-offs and students-entrepreneurs discussions.

8.9 General observations

Entrepreneurship education is globally recognised for its role in human capital development. However, the EE adopted by the selected TVET institutions fails to address the acquisition of some specific skills for entrepreneurial readiness or venture creation. It was observed that most of the entrepreneurship curriculum content is theoretical based (classroom teaching) with few practical trainings. For instance, risk-taking management is taught as a classroom subject, rather than having entrepreneurship training programs or workshops on how to take business risk. Hence, the students lack the risk-taking ability for entrepreneurial readiness.

This study also found that the EE curriculum does not make provision for training on the acquisition of proactivity skills and problem-solving skills which are crucial skills for business growth and sustainability. Further, the need to identify individual student's entrepreneurial orientation is yet to be incorporated into the entrepreneurship scheme of work. In the same vein, the determination of specific aspect of strength or weakness in the students' ESE multi-constructs of venture creation is yet to be harnessed by EE at the selected TVET institutions. There is need to incorporate the concepts of IEO and ESE multi-constructs of venture creation in terms of entrepreneurship training programmes into the entrepreneurship scheme in the selected TVET institutions. This will enable entrepreneurship educators to identify the area of skills demand for individual student and the required need to respond to it.

It was observed that the selected TVET institutions do not have a practical framework for EE to determine entrepreneurial readiness for the students. The current entrepreneurship education framework does not have practical effect on the students' entrepreneurial readiness. There is need for a reliable framework to measure individual student's entrepreneurial orientation and also determine their ESE aspect that can stimulate entrepreneurial readiness for venture

creation. Designing effective entrepreneurship programmes is expensive. The selected institutions are government establishments, and the government need to provide equipment for entrepreneurship trainings. The EE curriculum needs to be reformed to accommodate the proposed framework for students' entrepreneurial readiness.

The Nigerian environment is entrepreneurially-hostile. Micro-finance banks usually enforce interest rate on loans. To alleviate the challenges of EE among the youth, there is need for the government and private organisations to provide financial support for graduates of TVET institutions with realistic and achievable business proposals. Grants and soft loans with zero interest will encourage potential entrepreneurs to create new start-ups.

8.10 Contribution to theory in entrepreneurship

Entrepreneurship education is a major reliable source for entrepreneurship skills. EE avails an individual the knowledge and requisite skills for successful business enterprise. The contribution of this study to existing knowledge in the field of entrepreneurship is the empirical measurement and validation of psychosocial determinants of entrepreneurial readiness. in selected TVET institutions, Lagos Metropolis, Nigeria. Three constructs with eleven sub-constructs were measured and empirically validated. The outcome of the analysis revealed that business management skills, and personal entrepreneurial skills have significant influence on the students' entrepreneurial readiness. However, technical skills revealed insignificant relationship with students' entrepreneurial readiness (see Table 6.24). These findings indicated that business management skills, technical skills and personal entrepreneurial skills are critical for students' entrepreneurial readiness.

The determination of the relationship between ESE multi-constructs and students' ER revealed that ESE searching, ESE planning and ESE implementing significantly influence the students' entrepreneurial readiness. However, ESE marshalling has no significant link with the students' entrepreneurial readiness. These findings reflect the realistic situation in the selected TVET institutions (see Figure 6.13). The EE does not provide for any teaching or training on gathering economic resources skills (ESE marshalling) for business start-ups. These findings contributed to entrepreneurship theory as there is no evidence in literature of such findings in Nigeria's TVET institutions.

Exploring the relationship between IEO postures and entrepreneurial readiness also contributed to theory in entrepreneurship as this has not been examined before in TVET institutions in Nigeria. The empirical findings in Table 6.35 revealed that there is no significant relationship

between IEO risk-taking and entrepreneurial readiness, despite the teaching on risk management. This finding is similar to the empirical outcome of the Pearson correlation (see Table 6.31) on the relationship between IEO and students' entrepreneurial readiness, in which risk-taking shows a weak relationship with entrepreneurial readiness. This brings to fore the crucial need for entrepreneurship training programmes in the selected TVET institutions. These findings further confirm that experiential learning is compatible with entrepreneurship training.

Another contribution to theory in management and entrepreneurship is the identified weakness in the current EE framework at selected TVET institutions. The current framework of entrepreneurship education lacks the practical ability to determine the strength and weakness of student's entrepreneurial orientation, as well as ESE specific aspect of skills demand in terms of starting a business (see Table 4.2). Therefore, the proposed conceptual framework of entrepreneurship education could help stakeholders in curriculum development for TVET institutions and general education to gain insight into reforming the entrepreneurship curriculum content to suit students' needs. Additionally, all the findings from this research study could motivate academics, entrepreneurs and practitioners in the field of entrepreneurship to test and validate the model for adoption in other relevant fields as entrepreneurship cut across many disciplines.

8.11 Limitations of the study

A case study research design was adopted for this study. Explanatory sequential mixed methods were used for data collection and analysis. Survey questionnaire were used for quantitative data collection. Quantitative data collection and analysis were conducted first. Sequentially, qualitative data collection was done through in-depth interviews. Interview questions were asked based on the outcome of the quantitative data analysis to complement some findings of the quantitative analysis. The scope of the research study was limited to three selected TVET institutions in Lagos Metropolis, Nigeria, and as such, the findings from this research cannot be used for the generalisability of other TVET institutions in Nigeria. However, inferences can be made to other TVET institutions outside Lagos Metropolis since the education system is similar for all Nigerian TVET institutions. Secondly, some predictors of entrepreneurship readiness are traits-specific, thus, it may be difficult to determine what constitutes a conceptual framework for particular individuals. However, the tested constructs in this study have been proven to be effective (Elmuti *et al.,* 2012; Maritz & Brown, 2013; Martin & Pear, 2015; Nowiński, *et al.,* 2019).

8.12 Suggestions for future study

This study explored psychosocial determinants of entrepreneurial readiness towards venture creation in selected TVET institutions, Lagos Metropolis. The research findings revealed a significant relationship between entrepreneurship education and entrepreneurial readiness. However, technical skills were not significant with entrepreneurial readiness. Future research needs to examine other aspects of entrepreneurship education that can influence entrepreneurial readiness in students of TVET institutions.

The relationship between ESE and entrepreneurial readiness was investigated. Research findings revealed that ESE searching, ESE planning and ESE implementing showed significant influence on entrepreneurial readiness. But ESE marshalling was non-significant with entrepreneurial readiness. There is need for further research to examine other multi-dimensional constructs of ESE that can stimulate students' entrepreneurial readiness.

The influence of IEO and entrepreneurial readiness at the selected TVET institutions was also explored. Further research may focus on other propensities of IEO that can motivate students' entrepreneurial readiness in TVET institutions or other general education.

Further, there is need for future research to determine the mediating effect of ESE between EE and entrepreneurial readiness through entrepreneurship education. The model in Figure 8.1 can be subjected to test in other public and private TVET institutions in Nigeria.

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APPENDIX A

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL

For research with human participants

Information Sheet and Consent to Participate in Research

Date: 24th July, 2019

Greetings,

My name is Adeshina Adeniyi from the Department of Entrepreneurship, University of KwaZulu-Natal South Africa. Email: 218085365@stu.ukzn.ac.za

Phone: +27614560062. My supervisor is Dr. Vangeli Gamede. Phone number: +27823311215, and my Co-Supervisor is Dr. Evelyn Derera. Phone number: +27833951949.

You are being invited to consider participating in a study that involves research on Psychosocial Determinants of Entrepreneurial Readiness: The Role of TVET Institutions in Nigeria. The aim and purpose of this research is to determine psychosocial factors of entrepreneurial readiness that can stimulate venture creation among exit level students of TVET institutions in Nigeria. The study is expected to include 310 participants. 301 Tech 3 students, and 9 entrepreneurship teachers in the three selected TVET Institutions The three colleges are Government Technical College Ikotun, Government Technical College Ado-Soba, and Federal College of Education Technical, Akoka. All these institutions are located in Lagos State. Questionnaire will be administered to the Tech 3 students which will take not more than 20 minutes. The teachers will be scheduled for interview sessions for not more than 30 minutes.

The study does not involve any risks and we hope that the study will create the following benefits such as developing students' entrepreneurial orientation, preparing them for business creation. There will be no direct financial compensation for participating in this study. Participants anonymity will be maintained.

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

In the event of any problems or concerns/questions you may contact the researcher or supervisors at the contact details provided above or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building
Private Bag X 54001
Durban 4000 KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Your participation in the study is voluntary and by participating, you are granting the researcher permission to use your responses. You may refuse to participate or withdraw from the study at any time with no negative consequence. There will be no monetary gain from participating in the study. Your anonymity will be maintained by the researcher and the School of Management, I.T. & Governance and your responses will not be used for any purposes outside of this study. All data, both electronic and hard copy, will be securely stored during the study and archived for 5 years. After this time, all data will be destroyed.

If you have any questions or concerns about participating in the study, please contact me or my research supervisors at the numbers listed above.

Sincerely

ADESHINA ADENIYI OLUSHOLA

CONSENT TO PARTICIPATE

I ……. have been informed about the study entitled Psychosocial Determinants of Entrepreneurial Readiness: The Role of TVET Institutions in Nigeria by Adeshina Adeniyi Olushola.

I understand the purpose and procedures of the study which is to measure the effectiveness of psychosocial factors of entrepreneurial readiness in TVET colleges in Nigeria.

I have been given an opportunity to ask questions about the study and have answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at (218085365@stu.ukzn.ac.za or +27614560062).

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building
Private Bag X 54001
Durban
4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557 - Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Additional consent, where applicable

I hereby provide consent to:

Audio-record my interview YES / NO

_____ _____

Signature of Participant **Date**

INTERVIEW QUESTIONS

1. What type of training do you have on how to identify business opportunities?
2. What type of business opportunities are the students able to identify for self-employment?
3. What type of training do you have on developing business proposals?
4. What type of business proposal plans have been achieved by the students?
5. What type of training do you have on putting resources together to start a business?
6. How have the students been able to put resources together to start a business?
7. What type of training do you have on how to establish a new business?
8. What type of business have been established by the students to become self-employed?
9. What are the available entrepreneurship trainings on business management?
10. What are the available entrepreneurship trainings on how to acquire personal entrepreneurial skills?
11. What are the available entrepreneurship trainings on acquiring technical skills?
12. What type of entrepreneurship trainings do you have on how to acquire risk-taking skills?
13. What type of entrepreneurship trainings are available on acquiring innovative skills?
14. What are the available entrepreneurship trainings or programmes on how to acquire proactive skills?

QUESTIONNAIRE

SECTION A: Demographic Data

Select the ONE option that applies to you

1 Gender

Male	Female

2 Marital status

Single	Married

3 Indicate your department (**Select ONE option only**)

Electrical/Electronic Engineering	Automobile Engineering	Mechanical Craft/ Engineering	Computer Science/ Engineering
Refrigeration & Air-conditioning	Welding & Fabrication	Brick Laying & Concrete Making	Furniture Crafts
Plumbing & Pipe fittings	Graphic Arts	Garment Making & Design	Business Studies

4 Age

Less than 20	20-24	25-29	30-34	35 or more

SECTION B: Select the ONE option that applies to you according to the scale provided.

1 INDIVIDUAL ENTREPRENEURSHIP ORIENTATION

		Strongly disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
RISK-TAKING							
1.1	I am willing to take risks in order to achieve a goal						
1.2	I am more energized in situations where the outcomes have uncertainty and risk than in situations where the outcomes are predictable						
1.3	I am willing to take a loan to start a small business						
1.4	I tend to act 'boldly' in situations where risk is involved						
1.5	I am willing to spend money on something that might give a high profit						
INNOVATIVENESS							
1.6	When doing a project, I prefer to use a unique, one-of-a-kind approach rather than using approaches that have been used before						
1.7	I often like to try new and unusual activities that are not necessarily risky						
1.8	I prefer new and original methods to solve problems rather than using other people's methods of solving problems						
1.9	I prefer to try my own unique way when learning new things rather than doing it like everyone else does						
1.10	I have the ability to think up new ideas and activities						
1.11	I like to try new things						
PROACTIVENESS							
1.12	I prefer to step-up and get things done myself rather than waiting for someone else to do it						
1.13	I tend to plan ahead on projects						
1.14	I usually look ahead to identify problems and needs so that I can deal with them before they happen						
1.15	I am always looking for better ways to do things						

ENTREPRENEURSHIP SELF-EFFICACY

		Strongly Disagree	Disagree	Slightly disagree	Slightly Agree	Agree	Strongly Agree
	BUSINESS SEARCHING SELF-EFFICACY						
2.1	I am confident that I have the ability to identify a good business opportunity in my environment						
2.2	I am confident that I have the ability to identify the need for new products or services						
2.3	I am confident that I have the ability to identify a new product in order to satisfy customers' needs						
2.4	I am confident that I have the ability to come up with a new idea for a product or service						
2.5	I am confident that I have the ability to identify business opportunity from people's needs						
	PLANNING SELF-EFFICACY						
2.6	I am confident that I can develop my idea into a business plan						
2.7	I am confident that I have the ability to design an effective marketing/advertising strategy for a new product or service						
2.8	I am confident that I have the ability to determine the right workers and environment for my business idea.						
2.9	I am confident I have the ability to clearly explain my business plan both in writing and verbally						
	MARSHALLING SELF-EFFICACY						
2.10	I am confident I have the ability to influence people to believe in my new business						
2.11	I am confident that I have the ability to raise money to start a business						
2.12	I am confident that I can convince people to make financial contributions towards starting my business						
2.13	I am confident that I have the ability to motivate people to partner with me						
2.14	I am confident that I have the ability to convince people to commit their time and energy to my business						
	IMPLEMENTING SELF-EFFICACY						
2.15	I am confident I have the ability to start a small business with limited resources						
2.16	I am confident I have the ability to manage my financial resources						
2.17	I am confident that I can satisfy my customers by addressing their needs						
2.18	I am confident I have the ability to sustain my business for more than 5 years						

		Strongly Disagree	Disagree	Slightly disagree	Slightly Agree	Agree	Strongly Agree
2.19	I am confident that I have the ability to use new technology that will make my business competitive						
2.20	I am confident that I have the ability to deal effectively with day-to-day problems and crises						
2.21	I am confident that I have the ability to face challenges I come across in my business						
2.22	I am confident I have the ability to make my unique idea a reality						

ENTREPRENEURSHIP EDUCATION

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
TECHNICAL SKILLS							
3.1	I can communicate my views with fluency in English						
3.2	I find it easy to listen and understand what others are saying						
3.3	I can use technology effectively to communicate with others						
3.4	I find it easy to confront other peoples' problems and resolve them						
3.5	I can write my ideas and opinions clearly to convince my audience						
3.6	I find it easy to make clear and concise presentations to others						
3.7	I try to find the real cause of problems before taking action						
3.8	I can think in a logical manner when approaching and solving problems						
3.9	I am able to look at the big picture when approaching a problem that needs solving						
3.10	I can ask questions and look for further information to give me a better understanding of a problem						
BUSINESS MANAGEMENT SKILLS							
3.11	I can make quick but clear decisions to encourage others into action						
3.12	I take responsibility for decisions I make and actions I take						
3.13	I can easily get information to help me make decisions						
3.14	I usually set achievable/realistic targets						

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
3.15	I develop plans for specific goals and tasks						
3.16	I consider a wide range of alternatives before making a decision						
3.17	I am able to set a budget						
3.18	I am able to keep financial records						
3.19	I am able to communicate with business partners from other countries						
3.20	I am able to understand the value of Naira for foreign exchange						
3.21	I have sound financial awareness						
	PERSONAL ENTREPRENEURIAL SKILLS						
3.22	I prefer to work under my own direction						
3.23	I can identify business opportunities online for myself and my community						
3.24	I can search for business information on the internet.						
3.25	I can sell or market products through the social media.						
3.26	When I see something needs doing, I do it without being asked						
3.27	I find it easy to convince people to accept an idea or buy a product						
3.28	Being the best in the field is very important to me						
3.29	I can adapt easily to new situations						
3.30	I have open and friendly approach towards people						
3.31	I find it easy to develop relationships with people						
3.32	I can easily direct people and motivate them						

ENTREPRENEURIAL READINESS

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
4.1	I believe I have the technical skills needed to run a business in the 21st century						
4.2	I can improve on an existing technology by creating a better version to satisfy peoples' needs						
4.3	I am able to use the latest windows version on the computer						
4.4	If I fail at something, I have the ability and endurance to try again until I get a result						
4.5	I am able to browse the internet for business solutions						
4.6	I know how to complete 'business' transactions online using my mobile phone e.g. sales						
4.7	I am able to advertise any product or service through the social media.						
4.8	I am able to do online banking e.g. money transfers, using my mobile phone						
4.9	I am able to set up and use a spreadsheet on the computer to do mathematical calculations						
4.10	I am able to identify and protect my business against any online fraud activities						
4.11	I am able to do graphic designs on the computer						
4.12	I can cope with multiple demands on me at the same time						
4.13	I am able to use computer software that applies to my technical field						

APPENDIX B

LAGOS STATE GOVERNMENT
LAGOS STATE TECHNICAL AND VOCATIONAL EDUCATION BOARD (LASTVEB)
GOVERNMENT TECHNICAL COLLEGE, ADO - SOBA
P.M.B. 018, FESTAC TOWN.
ABULE - ADO B/STOP,
OFF BADAGRY EXPRESSWAY,
LAGOS.
E-MAIL: gotecoadosoba@yahoo.com
FOUNDED 1985
Principal: JAGUN S. A. M.ED, PGDE(Tech); HND (Mech); NATT; NAEC.
08035713124

Ref. No.

The School of Management,
Information Technology & Governance.
College of Law & Management Studies,
P.M.B 6000, Westville Campus
South Africa.

GATEKEEPER'S CONSENT

I Jagun Salihu Abdulganiyu in my capacity as the Principal of Government Technical College, Ado-Soba, hereby give permission to Adeshina Adeniyi, Student Number, 218085365) to conduct research in the above institution.

The student may use the name of the institution in the thesis

[redacted]

Thanks

LAGOS STATE GOVERNMENT
LAGOS STATE TECHNICAL AND VOCATIONAL EDUCATION BOARD
GOVERNMENT TECHNICAL COLLEGE, IKOTUN

MR.ADARAMOLA.S.O

Principal:-
P.O. Box 427, Ikotun

Telephone: 08023192996

All correspondence to be addressed to the office of the Principal

6th August, 2018

GATEKEEPER'S CONSENT

I Mr.ADARAMOLA.S.O in my capacity as the Principal of the College, hereby give permission to Adeniyi Adeshina Olushola (student No:- 218085365) to conduct research in my organization.

The student may use the name of the organization in the dissertation.

Name of Manager: [redacted]

Signature of Manager

Date: 06/08/18

GOVT. TEC
IKO
PRINCIPAL
DATE
Officer Stamp
Organisation

[redacted]

06/08/18

FEDERAL COLLEGE OF EDUCATION (TECHNICAL)
AKOKA-LAGOS, NIGERIA

(Established 1967)

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Our Ref: ..... *Your Ref:* ..... *Date:* 28th January, 2019

The School of Management,
Information Technology & Governance,
College of law & Management Studies,
P. M. B. 4000,
Westville Campus,
South Africa.

Dear Sir,

GATEKEEPER'S CONSENT

I, Abayomi Adegbenjo in my capacity as the Dean, Student Affairs Unit of the Federal College of Education (Technical), Akoka, hereby give permission to Adeshina Adeniji (Student Number: 218985365) to conduct research in the above institution.

The student may use the name of the Institution in the thesis.

Thank you.

[redacted]

Dean of Student Affairs,
Federal College of Education (Tech)
Akoka, Lagos.
28/01/2019

P. O. BOX 269, Yaba, Lagos. Nigeria. Tel: 08062762711, 09077747776
www.fcet-akoka.edu.ng; E-mail: fcetakoka@yahoo.com

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

08 April 2021

Mr Adeshina Olushola Adeniyi (218085365)
School of Management, IT & Governance
Westville Campus

Dear Mr Adeniyi,

Protocol reference number: HSSREC/00000289/2019
Project title: Entrepreneurial propensity aspect in the technological and future-oriented work readiness of exit level students in selected Nigerian vocational institutions
Amended title: Psychosocial determinants of entrepreneurial readiness: The role TVET institutions in Nigeria

Approval Notification – Amendment Application

This letter serves to notify you that your application and request for an amendment received on 25 February 2021 has now been approved as follows:

- Change in title

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

Best wishes for the successful completion of your research protocol.

Yours faithfully

[redacted]

.....
Professor Dipane Hlalele (Chair)

/ms

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

17 September 2019

Mr Adeshina Olushola Adeniyi (218085365)
School Of Man Info Tech & Gov
Westville Campus

Dear Mr Adeniyi,

Protocol reference number: HSSREC/00000289/2019
Project title: Entrepreneurial propensity aspect in the technological and future-oriented work readiness of exit level students in selected Nigerian vocational institutions

Full Approval – Expedited Application

This letter serves to notify you that your application received on 20 August 2019 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid for one year from 17 September 2019.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

Yours sir

[redacted]

Dr Rosemary Sibanda (Chair)

/spm

PhD thesis_11.05.2021

ORIGINALITY REPORT

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PRIMARY SOURCES

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