THE IMPACT OF ENTREPRENERUSHIP EDUCATION PROGRAM ON STUDENTS' ENTREPRENERUIAL INTENTIONS IN NIGERIAN UNIVERSITIES

By

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A Thesis

Submitted in partial fulfilment of the requirements of Nottingham Trent University for the degree of Doctor of Philosophy

December, 2017

DECLARATION

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ABSTRACT

The importance attached to entrepreneurship education has become recognized and important by the Nigerian government and Universities that these programs are made compulsory for undergraduates. However, the impact of the existing entrepreneurship education programs in Nigerian Universities in aiding the decision to become self-employed after graduation still remains unclear. A comprehensive examination of the impact of these specific programs have not been examined since their establishment over a decade. This study examines the impact of entrepreneurship education on students' entrepreneurial intentions in Nigerian Universities, and identifies the factors that influence their entrepreneurial intentions. It also considers the suggestions that address the design of entrepreneurship education programs for Nigerian University students. The need of this research developed as a result of the high rise of unemployment among Nigerian graduates, and the scantiness of empirical research on entrepreneurship education in Nigeria. This research followed a pretest post test quasi-experimental control group designs by using a group of third year students that participated in entrepreneurship programs and as a control group, students who do not participate in the entrepreneurship programs to measure their entrepreneurial intentions and its antecedents at the beginning and after a semester long entrepreneurship program.

Results revealed that there is a positive link between entrepreneurship education and entrepreneurial intentions for Nigerian University Students. It indicates that there is a significant difference between the two groups, the entrepreneurship students showed a higher perceived desirability for entrepreneurship, entrepreneurial self-efficacy, entrepreneurial intentions than the non participants. It also showed that the entrepreneurial learning gained from the program can benefit students with an improved desire and capability to embark on entrepreneurship. The

results also showed that perceived desirability for entrepreneurship and entrepreneurial self-efficacy were the most significant factors than other control factors in influencing entrepreneurial intentions. Added to this, the element of perceived desirability was found to be stronger than entrepreneurial self efficacy in the influence. Also, among the control factors tested, it was only students' course of study that was found to be a significant influencing factor entrepreneurial intentions.

This thesis has made contributions to the existing body of knowledge in the fields of entrepreneurship education and entrepreneurial intentions in a number of ways. Firstly, it conducted one of the pioneer research on entrepreneurship programs that have received no attention in the last decade in Nigeria, by providing more evidence on the applicability of theory of planned behavior in examining the impact of the program on entrepreneurial intentions. Secondly, it also provides more evidence that non-business students specifically, science-based can also develop higher entrepreneurial intentions. Thirdly, through a pre-test post-test quasi experimental control group design in a developing country, this thesis contributes to the methodology used for assessing the impact of entrepreneurship education by providing a robust approach in the assessment. Fourthly, it also adds to the debate on the most influential elements for determining students' entrepreneurial intention as perceived desirability for entrepreneurship and entrepreneurial self-efficacy. Fifthly, it provides more insight into the benefits of entrepreneurship education by revealing the positive impact that entrepreneurial learning has on perceived desirability for entrepreneurship and entrepreneurial self-efficacy. Sixthly and finally, it also provides suggestions for improving the design of entrepreneurship education programs for the Nigerian Universities. It was also proposed that with these suggestions, the entrepreneurship

education programs in Nigeria may further consider the suggestions in the program by piloting the test of its impact on students' entrepreneurial intentions.

ACKNOWLEDGEMENT

Alhamdulillah, praise be to Almighty Allah. I would like to thank, and offer my appreciation to my two supervisors, Dr Kostas Galanakis and Dr Francis Neshamba who was there right from the beginning of this project till the end, for their ability to make me think in different ways that were new to me and outside the box, with their dedicated direction. Special thanks to the staff of Nottingham Trent University, I wish to thank Dr Nestor Valero-Silva and Dr Angelo Bisignano, and Dr. Amon Simba for their insightful discussions and support during this period.

I would like to offer my sincere gratitude to my Baba for being my pillar of inspiration, strength and support. My deepest gratitude goes to my other half Ibrahim for his unconditional support, prayer, and love. May Allah bless both of them with the bounties of Jannah. To my little tots Muhammad and Aisha for sharing every moment in my journey. I would also like to acknowledge all my family members Mama, Anti, Mamana, Baaba, Distinguish, Elder, Tafida, Zee, Jay, Zaks, Dr. F.G, Barrister, Mahmud, and Fauzy for their unfailing love and encouragements. Finally, my gratitude goes to Abba and Umma for standing in for me with their support and love throughout these moments. I would never forget their love towards me and my whole family.

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ABBREVIATIONS

BOI	**Bank of Industry**
EED	**Entrepreneurship Education**
EI	**Entrepreneurial Intentions**
ESE	**Entrepreneurial Self-efficacy**
GST	**General Studies**
H	**Hypothesis**
HEI	**Higher Education Institution**
M	**Means**
NUC	**National Universities Commission**
PD	**Perceived Desirability**
SD	**Standard Deviation**
SEE	**Shapero's Entrepreneurial Event**
STEM	**Science, Technology, Engineering, and Mathematics**
TPB	**Theory of Planned Behavior**

CHAPTER 1 INTRODUCTION

Introduction

This Chapter will present the context of this research. This would discuss why the study is being conducted and its importance. A brief outline of the research aim and objectives of the study are also provided to make sense of real issues discussed in the study. The context of Nigeria is also discussed which forms the bases for the rationale by highlighting key issues in the study. The contribution that this research has made to knowledge is also highlighted. This is followed by a brief summary of the structure of this thesis.

1.1 Research Context

During the past few decades, entrepreneurship has become a vital topic for the socio economic development of the world (Gibb, 2002). Countries with higher levels of entrepreneurial activities tend to show lower levels of unemployment (Audretsch, 2002; Bosma et al., 2012). According to research, entrepreneurship is a particular type of a planned and intentional act that can promote efficiency in the economy by providing employment through new job creation, innovation economic growth (Shane and Venkataraman, 2000; Karimi et al., 2016; Milana and Wang, 2017). For example, in Nigeria, according to the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN), micro small and medium enterprises (MSMEs) account for 96% of all firms and contribute to 75% of the jobs in the country (SMEDAN, 2017).In developed countries such as the United Kingdom, MSMEs represent over 99 % of all firms, and account for 48% of private sector employment, and 33% private sector turnover (Lord Young, 2015; Rhodes,

2016).Given the importance of entrepreneurship (Fayolle et al., 2013), it is clear that entrepreneurship can address issues of unemployment prevailing among young graduates.

The demand of employers in the twenty first century is changing their demands towards employing graduates equipped with the necessary entrepreneurial knowledge, skills and, abilities to create competitive advantage in the harsh and uncertain business environment (Gibb et al., 2009; Boyles, 2012). Oseni et al (2015) argued that in Nigeria, the prevailing curricular in Higher education institutions are not designed to prepare students to become entrepreneurs that can compete favorably in modern business environment but to become civil servants. In this case, students need to develop their entrepreneurial mindset and skills to align it with the competitive enterprising roles in the job market (Hermann et al., 2008).

Several studies have made a consensus that entrepreneurship, or some part of it can be learned, and that education can be regarded as an important avenue for raising entrepreneurial attitudes, competencies and intentions (Henry et al., 2005a,b; Kuratko, 2005; Neck and Green, 2011). Therefore, entrepreneurship education can stimulate entrepreneurship.

The importance of entrepreneurship has led to the increase in the significance and global relevance of entrepreneurship education programs in higher education institutions (Finkle and Deeds, 2001; Katz, 2003; Kuratko, 2005; European Commission, 2006;Finkle et al., 2006; Solomon, 2007; Matlay and Carey, 2007; Hannon, 2007; Hermann et al., 2008; Volkmann and Audretsch, 2017). In the United States of America (USA), Katz (2003) examined over 100 Business schools and found that the growth of entrepreneurship has reached saturation and future growth is expected from non-business schools and beyond the borders of the United States of America (USA).In the United Kingdom (UK), Hannon's (2007) study indicated that only 7 per cent of the entire student populace in the UK were engaged in entrepreneurship programmes, and

this figure grew to 16 per cent by 2010 (National Council for Graduate Entrepreneurship, 2010). The Quality Assurance Agency (QAA) point out that the recognition of entrepreneurship education as a key investment avenue for tertiary education is well grounded within policy guidelines at national and international levels (Quality Assurance Agency, 2012). The World Economic Forum (WEF, 2011) produced a final report on the entrepreneurship education work stream suggesting that:

> *"At the national level, commitment is needed at the highest levels of government as well as greater collaboration between the various ministries involved in entrepreneurship and education.……The building blocks for entrepreneurship should be identified and required outcomes need to be monitored to ensure the efficiency of the programmes and policies" (p.13).*

Nigeria is also not left out in the trendto develop youths with entrepreneurial mindsets and practice. In the country, there are 140 Universities comprising of both public and privateinstitutions. The Nigerian Federal Government through the National Universities Commission (NUC) approved the addition of compulsory entrepreneurship education program within the education curricula for all undergraduates in these 140 Universities (NUC, 2011; Babatunde and Durowaye, 2014).

It has been asserted that the purpose of entrepreneurship education is mainly to develop a positive entrepreneurial attitude, knowledge and skills that could be applied to create socio economic value in an individual's personal and societal life(Henry et al., 2005;Pittaway and Cope, 2007; Hermann et al., 2008;Draycott and Rae., 2011; Karimi et al., 2016). The assumption

underlying entrepreneurship education is that the skills and creativity necessary to make an individual have a successful business ventures can be enhanced by entrepreneurship education not necessarily a natural talent (Fayolle et al., 2013). The programs are targeted to comprehend what is entrepreneurship and to transform classroom theories and concepts into reality (Lourenco et al., 2013). By this approach, students are expected to become motivated and self confident in their capabilities in starting and running their own ventures. Nevertheless, the impact of such programs is scarce in developing countries. Therefore, studying the impact of entrepreneurship education programs is an important research to embark on.

1.2 Aim and Objectives of the Study

Based on the brief context outlined above, the importance of entrepreneurshipand entrepreneurial intentions to the University students are clear. In order to make sense of issues to be explored in the Nigerian context, this study aims to develop an entrepreneurship education framework by examining the impact of entrepreneurship education programs on students' entrepreneurial intentions in Nigerian Universities, and identifying the factors that influence their entrepreneurial intentions. Specifically, the current research objectives of this study are:

- To examine the impact of entrepreneurship education on students' entrepreneurial intentions;
- To identify the factors that influence their entrepreneurial intentions; and
- To provide suggestions that would address the design of entrepreneurship education for Nigerian University students.

1.3 Context of Nigeria and Entrepreneurship Education Development

Nigeria has been categorized as a developing country. It is also regarded as the most highly populated country on the continent with an estimated population of about 184 million people accounting for about 47% of Africa (World bank Data, 2017). Age structure of individuals in the country include 0 to 14 at about 43% of the population, while those between 15 to 65 make up about 53% (Central Intelligence Agency, 2017). Nigeria is a common wealth country that became independent from the colonial rule of the United Kingdom in 1960 after 60 years. The country is a political federation consisting of 36 states with the federal capital as Abuja, while Lagos is the commercial capital of the country. The country is endowed with abundant natural and human resource. However, the main source of revenue is from the oil and gas sector accounting Nigeria 90% of total revenue and (Organization for Petroleum Exporting Countries, 2017).

Figure 1.1The Map of Nigeria in Africa

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Source: World Atlas (2017)

Since independence, the number of higher education institutions in Nigeria has grown rapidly. The first institution being Yaba college of Technology at Ibadan in 1932, which was later renamed and upgraded to be known as University College in 1948. Thereafter, the government continued to encourage and liberalized the education sector by increasing the number of Institutions with a growing populace. There are currently 140 Universities in the country regulated and monitored by the National Universities Commission (NUC), which is an agency under the Federal Ministry of Education (NUC, 2011).

The educational policies implemented in Nigeria have a link with the colonial history of the country. These policies have not been reviewed to meet with the economic reality of the country

(Aladekomo; 2004; Raimi and Gabadeen, 2012). Early educational policies in Nigeria suited the basic administrative requirement of the colonial masters which included providing a colonial form of education to individuals so as to proceed for job employment within the civil service of the administration. This approach had a positive view as the labor market could contain the few number of educated people, thereby creating a job-seeking system for Nigerians. It was stated that:

> *"...The colonial educational policy centered on the production of literate nationals who were required to man positions, which would strengthen the colonial administration. Thus our educational institutions, few as they were remained factories for producing clerks, interpreters, forest guards and sanitary inspectors as no special professional nor entrepreneurial skill was envisaged in the educational system." (Aladekomo2004:75)*

In this case, the prevailing educational programs and their learning outcomes were not designed to enhance entrepreneurial drive, innovativeness, motivation, and capacity needed to set up their own businesses or compete in the current competitive business environment.

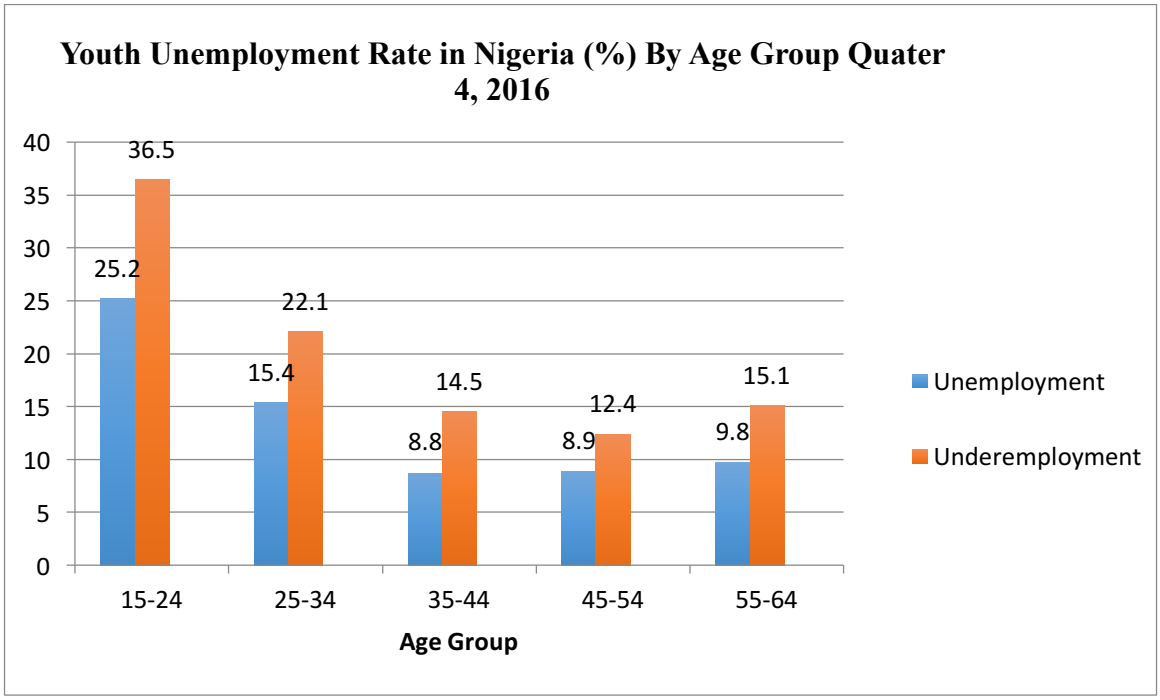


Figure 1.2 Youth Unemployment Rate in Nigeria

Source: Nigerian National Bureau of Statistics (2017)

According to the National Bureau of Statistics (2017), over 60% of the youth the total youth labor force[1]in Nigeria are unemployed (see figure 1.2 above). Prior to the rise of this figure, the Nigerian government had made series efforts through history to combat youth unemployment and promote existing small and medium sized enterprises (SMEs) in the country. From 1970 to 1980, the National Agricultural and the Rural Development Bank, Agricultural Credit Guarantee Scheme Fund, the Rural Banking program were established. From 1980 through 2001, the Nigerian Directorate of Employment (NDE), National Poverty Eradication Program (NAPEP), the People's Bank of Nigeria was created to provide special loan for the small scale industries to

[1]The total youth labor force combines youth unemployment (25.2%) and underemployment rate (36.5%) summed up at 61.7% in the fourth quarter of 2016. "A youth may not be working but may not necessarily be unemployed. A youth not working will only be termed unemployed if he is willing and able to work and actively looking for work within the review period. It is also important to note **distinction between unemployed and underemployed**. You are unemployed if you do nothing at all and underemployed if you still manage to do something for some money for at least 20 hours a week but is menial and not fully engaging relative to your skills, time and qualifications" (Quarter 4 Unemployment Report National Bureau of Statistics,Nigeria, pg.5).

develop. Community Banking system was also encouraged, and also the creation of the Directorate of Food, Rural, and Road Infrastructures (DFRRI). In 2003, the Small and Medium Development Agency in Nigeria (SMEDAN) was also set upto create as the current regulatory agency that focus on creating an enabling environment for micro small and medium enterprises (MSMES) by encouraging and providing access to physical and soft support such as infrastructures, business incubators, industrial parks and access to finance (SMEDAN, 2016). This governmental agency collaborates with both public and non public institutions in driving entrepreneurship in Nigeria. Unfortunately, the variation of these policies were not adequate in reducing the rising unemployment rate (Akhuemonkhan et al., 2013).

Given the concern of the government on the high rise of unemployment of University graduates in Nigeria, in 2007, the Federal Ministry of Education through the National Universities Commission (NUC)directed all HEIs in the country to deliver a compulsory entrepreneurship education program for all students**.** This policy was set up in order to develop students' ability and attitudes towards setting up their own businesses rather than seeking for employable jobs. Policies were aimed at reforming the HEI curricula. The process includes delivering the program to students at their senior years and familiarize key stakeholders in Universities regarding the need and importance of entrepreneurship. The implementation of the entrepreneurship program policy is being carried out by most Universities and it is at its infancy in Nigerian Universities. In this regard, the National Universities Commission (NUC) developed the "General Studies" courses on entrepreneurship in April 2007 as mandatory program for all undergraduate students (NUC, 2011).

Another recent on-going program regarded as successful is the Nigeria YOU-WIN Connect competition; a specially designed program that assess viable business plans developed by youths that allow them to win start-up capital up to the sum of $20,000 (YOU WIN Nigeria, 2017;McKenzie, 2015). The bank of Industry (BOI) a major development finance corporation in Nigeria also recently developed a fund through the graduate entrepreneurship scheme (BOI, 2016) to facilitate graduate students attending the national service program in the country for students interested in self-employment. Both of the two programs Nigeria You Win and graduate entrepreneurship scheme were recommended and approved by SMEDAN. The government aims for the programs (Nigeria You Win and graduate entrepreneurship scheme) to complement existing efforts by the Universities in delivering entrepreneurship.

1.4 Research Rationale

From the brief outline of entrepreneurship education development in Nigeria above, the relevance of entrepreneurship education to the development of the country is clear. The concept of predicting entrepreneurial behavior is well grounded within the concept of entrepreneurial intentions and its antecedents (Bird, 1988; Krueger et al., 2000; Autio et al., 2001; Fayolle et al., 2013; Rauch and Hulsink, 2015; Karimi et al., 2016; Premand et al., 2016). It is agreed that entrepreneurship education is regarded as an important human asset by both public or non-public bodies, more research is needed to examine the impact of such programs on entrepreneurial intentions (Nabi et al., 2010; 2016; 2017).

Entrepreneurial intention is regarded as the self-determination within an individual's mind that decides the manner and act towards becoming self-employed within a particular time frame in the future (Krueger and Brazeal, 1994; Krueger et al., 2000). Prior studies have shown that

individuals with a high level of entrepreneurial intentions have the higher probability of starting their own businesses than those with lower levels of entrepreneurial intentions (Ajzen, 2002). According to key intention theories namely; (a) the entrepreneurial event and, (b) the theory of planned behavior, entrepreneurial intentions occur by it antecedents - an individual's perceived desirability for entrepreneurship (the perceived attractiveness towards entrepreneurship) and entrepreneurial self-efficacy (the perceived belief of one's capabilities) (Shapero and Sokol, 1982; Ajzen,1991; Fayolle et al., 2013). In addition, individuals that become exposed to specific education for entrepreneurship (as an external influence) are likely to develop higher entrepreneurial intentions than those who are not exposed (Souitaris et al., 2007; Sanchez, 2011; 2013). The notion of such exposure within one's environment is also grounded within Bandura's social cognitive theory (Bandura, 1997). In this regard, some particular issues have been identified within the Nigerian context that needs attention. Given the high rise in the figure of youth unemployment outlined earlier in figure 1.2 above, scholars concluded that the existing entrepreneurship programs for stimulating entrepreneurship development in Nigerian Universities are likely disproportionate to the career choices of students (Babatunde and Durowaiye, 2014; Garba et al., 2015; Fayomi and Fields, 2016).

According to Fayomi and Fields (2016), the NUC studied the expectations of employers in the labor market regarding Nigerian Universities' graduates in 2004. It was found that the existing curriculum does not adequately equip graduates for entrepreneurship, rather are prepared for employable jobs. The authors also studied the current entrepreneurship curriculum and its relationship in developing entrepreneurial graduates. It was found that the curriculum over emphasized using theories in delivering entrepreneurship education than practical aspects of

entrepreneurship. It was recommended that the framework of the existing entrepreneurship education should be reviewed to adequately prepare students' minds and competence towards self-employment.

Most of the guiding frameworks used for entrepreneurship education are mainly designed to suit the needs of developed countries (Yatu et al., 2016). Entrepreneurial intentions of individuals could vary across different contexts. Gabadeen and Raimi (2012) in their study highlighted the issues and challenges of entrepreneurship education in Nigerian higher education institutions. They recommended that it is important to consider the Nigerian environment when assessing or reviewing entrepreneurship curricula used in Universities in order to inculcate the right entrepreneurial attitudes and skills to students. In this sense, the requirements of entrepreneurship education in a developing country context could be specific to the country. It would be enlightening to develop a framework from an empirical research that could be specific for the Nigerian University students.

The federal ministry of education through the NUC directed all HEIs in the country to deliver a compulsory entrepreneurship program "general studies Entrepreneurship" to all students at their senior years since the 2006/2007 academic session (NUC, 2011). The program has been operating for a decade now. However, there is no research that has assessed the impact of this program in order to examine its impact. In this line, a recent systematic review of 159 studies on impact of entrepreneurship programs revealed that only 10% of the articles were from Africa compare to 69% from Europe, USA, and Australia, and 16% from Asia (Nabi et al., 2017). In this case, there is an absence of a comprehensive study on the impact of a decade long entrepreneurship education program in Nigeria. By conducting this study of impact of the

Nigerian entrepreneurship programs, this thesis can provide more empirical evidence from Africa within this research field.

Another issue within the Nigerian context is that little research exists in regards to solely science-based students in terms of the impact of an entrepreneurship program. Majority of the existing research study students from a combination of varying academic fields (Izedonmi and Okafor, 2010; Babatunde and Durowaiye, 2014; Chukwuma and Ogbeide, 2017). For example, Babatunde and Durowaiye (2014) conducted their study on students from business, science, and agricultural department. Izedonmi and Okafor (2010) focused on students from humanities, social science, and science and technology. While recently, Chukwuma and Ogbeide (2017) utilized students from management and education field. In this case, there might be students that already have in them an entrepreneurial inclination developed from their subjects beyond other students, more especially students from managerial related disciplines (Karimi et al., 2016). Science students could have the likelihood of entrepreneurship based on the advantage they have on their technical skills acquisition (Souitaris et al., 2007). With the rise in the importance given to studying science related careers among youths and entrepreneurship as a tool for economic development of a country (Oh and Lewis, 2011), there is a need for more studies on the impact of entrepreneurship education programs on science-based students' entrepreneurial intentions.

Furthermore, in methodological sense, there is a lack of research in Nigeria that employ strong statistical techniques in measuring impacts of entrepreneurship education. Most of the studies use the conventional post-test examinations in the form of crossectional studies for measurements of entrepreneurship programs. That is, students attending entrepreneurship programs are assessed only once after the program while ignoring their assessment before the

program (Izedonmi and Okafor, 2010; Babatunde and Durowaiye, 2014; Oguntimehin and Olaniran, 2017). Babatunde and Durowaiye (2014) conducted a cross sectional study by assessing the post program attitudes and entrepreneurial intentions of final year students in a Nigerian University and found that the program enhanced students' decision towards an entrepreneurial career. However, the study only utilized the post-program examination of impacts of entrepreneurship programs. Cross sectional measurements have been criticized in entrepreneurship education research (Von Graevenitz et al., 2010; Sanchez, 2013; Martin et al., 2013; Rideout and Gray, 2013, Nabi et al., 2017). Rideout and Gray (2013) stated that studies employing cross sectional methods might make it difficult to fully assess the direct impact of entrepreneurship programs because of the absence of assessing the actual pre-program entrepreneurial intention. Other than cross-sectional studies, these entrepreneurship education scholars suggested that quasi experimental studies could provide a clearer picture of the results of an entrepreneurship program that cross sectional methods fail to.

In addition, these scholars further suggested that future research in the field could consider utilizing a control group when conducting quasi experiments in order to promote comparisons across programs. Looking at the Nigerian context, the few existing research highlighted did not utilize control groups in examining the impact of entrepreneurship education programs (Babatunde and Durowaye, 2014; Oguntimehin and Olaniran, 2017; Chukwuma and Ogbeide, 2017). In fact, even in developed countries, only a few notable exceptions employed control groups – for example, Souitaris et al (2007), Thursby et al (2009), Sanchez et al (2011; 2013). The use of control groups within pre and post-test research designs (quasi experiments) have been identified as designs with strong statistical and methodological rigor (Rideout and Gray., 2013; Nabi et al., 2017). In this case, the use of such strong statistical techniques could develop

novel insights in research. Therefore, it may be worthwhile for entrepreneurship education research in Nigeria to use pre and post test examinations in measuring impacts of entrepreneurship education and as well, use control groups in these measurements in order to compare participating students in entrepreneurship programs and non-participants. It would also enhance the development of rigorous research in developing countries.

In addition, prior entrepreneurship research in Nigeria have not reached an accord on the most important factors that determine an individual's decision to create a new venture in the future. Little research focus on utilizing cognitive measures in determining entrepreneurial intentions (Garba et al., 2010; Baba, 2014). Majority of existing research in Nigeria heavily relied on personal characteristics as strong determinants of entrepreneurial intentions (Izedonmi and Okafor, 2010; Ekpoh, 2011; Akanbi, 2013; Ayodele, 2013; Owoseni, 2014; Ramoni, 2016). Ramoni (2016) studied the entrepreneurial intentions of students in a Nigerian University and found that risk-taking propensity and innovativeness influence students' entrepreneurial intentions. Izedonmi and Okafor (2010) studied entrepreneurial intentions of students across three Nigerian Universities and found support for the influence of need for achievement, locus of control, creativity, risk taking, and tolerance for ambiguity in determining their entrepreneurial intentions. It has been argued that argued that the capacity of the trait, demographic, or behavioral approach in predicting entrepreneurial intention is low compared to cognitive approach (Krueger et al., 2000; Linan et al., 2011; Fayolle et al., 2013). In this sense, it would be interesting for research to study the most crucial factors in a cognitive approach that could play a major role in influencing entrepreneurial intentions among Nigerian University students through cognitive measures.

Furthermore, there is no research in Nigeria that examine the benefits derived from entrepreneurship education programs. It is agreed that it is a tool for job creation and eradicating poverty in the country (Ekpoh,, 2011; Akhuemonkhan, 2013; Babatunde and Durowaiye, 2014). Babatunde and Durowaiye (2014) and Oguntimehin and Olaniran (2017) found a positive relationship between Nigerian entrepreneurship education and self-employment intentions. However, the significance of this relationship has not been established in these studies, which could allow the examination of the benefits that could be obtainable from the program. An important benefit from entrepreneurship education program can be entrepreneurial learning – which synthesis a variety of benefits in terms of entrepreneurial inspiration, knowledge, attitudes, practical, social, and opportunity recognition skills (Souitaris et al., 2007; Nabi et al., 2016). Since in the Nigerian context, it is agreed that a relationship exists between entrepreneurship education and entrepreneurial intentions, it can be suggested that the program as an exposure can also influence the antecedents of entrepreneurial intentions based on entrepreneurial intention theories (Souitaris et al., 2007). Therefore, it is important to examine the relationship between the entrepreneurial learning component as an indicator of entrepreneurship education in Nigerian Universities and the two antecedents of entrepreneurial intentions - perceived desirability for entrepreneurship and entrepreneurial self-efficacy.

1.5 Contribution to Knowledge

First, this study contributes to literature by developing and testing a conceptual framework in an intention model for assessing the impact of an existing entrepreneurship education program on students' entrepreneurial intentions in Nigeria. Little attention has been paid to studying the

impact of entrepreneurship education programs in Nigerian Universities. This assessment would be one of the pioneer studies in the country as the program has been existing for the past ten years which has not been assessed. Scholarly research indicates that the majority of entrepreneurship education and entrepreneurial intention research are conducted in developed countries, which does not provide a good level of generalization of research findings. The lack of available research in Nigeria and other developing countries mean that key stakeholders in entrepreneurship such as entrepreneurship educators and policy makers would have limited information on the local content order to guide program design and policies. By carrying out this research in Nigerian Universities, it provides more evidence to the applicability of entrepreneurial intention models in assessing the impact of entrepreneurship programs in the context of a developing country and provides a better guidance for the program.

By using an entrepreneurial intention model, this framework varies from previous models by showing the influence of the entrepreneurial learning component. This means that entrepreneurial learning exert influence on the elements of perceived desirability for entrepreneurship and entrepreneurial self-efficacy. By developing a positive attraction towards entrepreneurship and enhanced capabilities in key entrepreneurial tasks, students are likely to develop higher entrepreneurial intentions. In addition to the framework, this study has identified some gaps within the existing Nigerian entrepreneurship education program curriculum in relation to theory.

The second contribution is to assess the impact of entrepreneurship education programs on solely science-based University students in Nigeria. These categories of students have received little attention in existing literature. Several research exists on students from solely business or

business related disciplines. These students may have had some inclination on entrepreneurship during the course of their studies, thereby rendering the measurement of the impact unclear. This study showed the impact of entrepreneurship education on non-business students, specifically in the science discipline, and found a positive impact. This means that after an entrepreneurship education program, science students in Nigerian Universities had an increased entrepreneurial intention, perceived desirability, and entrepreneurial self-efficacy. Therefore, science students are most likely to embark on an entrepreneurial career after participating in entrepreneurship.

The third contribution is the utilization of a pretest and posttest with control group designs to examine the impact of entrepreneurship education programs. Studies using pretest and posttest measurements are scanty in entrepreneurship education research. Most of the prior studies use post test research designs to measure the impact of entrepreneurship education, which do not assess the direct impact of these programs. Added to that, majority of the studies in the Nigerian context primarily use posttest or basic descriptive studies. This study examines the impact of entrepreneurship programs in Nigerian Universities using a strong quasi-experimental control group design.

The fourth contribution is to empirically determine the most important factor in influencing student's entrepreneurial intentions. Considerable debates exist on the influencing factors for entrepreneurial intentions. Previous research underlined that perceived desirability for entrepreneurship and entrepreneurial self-efficacy are both necessary on the same level for entrepreneurial intentions to occur. The results of this study suggest between the two cognitive and other demographic variables, for Nigerian University students, perceived desirability for

entrepreneurship showed to be the most influential factor when forming entrepreneurial intentions. This means that, while the belief of having entrepreneurial competence and the positive attitudes towards entrepreneurship are vital for an individual when deciding to create new business ventures, for students in Nigerian Universities, it is the positive attitudes towards entrepreneurship that can highly determine whether or not they decide to embark on entrepreneurship.

As a fifth contribution, the study revealed the influence of the benefits of entrepreneurial learning component on the antecedents of entrepreneurial intentions. Few research exists on the relationship between participating in entrepreneurship programs and entrepreneurial intentions. The study demonstrates that the entrepreneurial learning component positively impact on students' perceived desirability for entrepreneurship and entrepreneurial self-efficacy. This means that an individual exposed to the entrepreneurial learning component that comprise of entrepreneurial knowledge, attitude, practical skills, social, and opportunity recognition skills participating in entrepreneurship education programs is likely to feel attracted to entrepreneurship and perceive to be capable to carryout tasks associated with stating a business. These perceptions are most likely to lead to entrepreneurial intentions. Studying these relationships in a setting like Nigeria can provide more evidence in regards to the benefits derived from participating in entrepreneurship education programs.

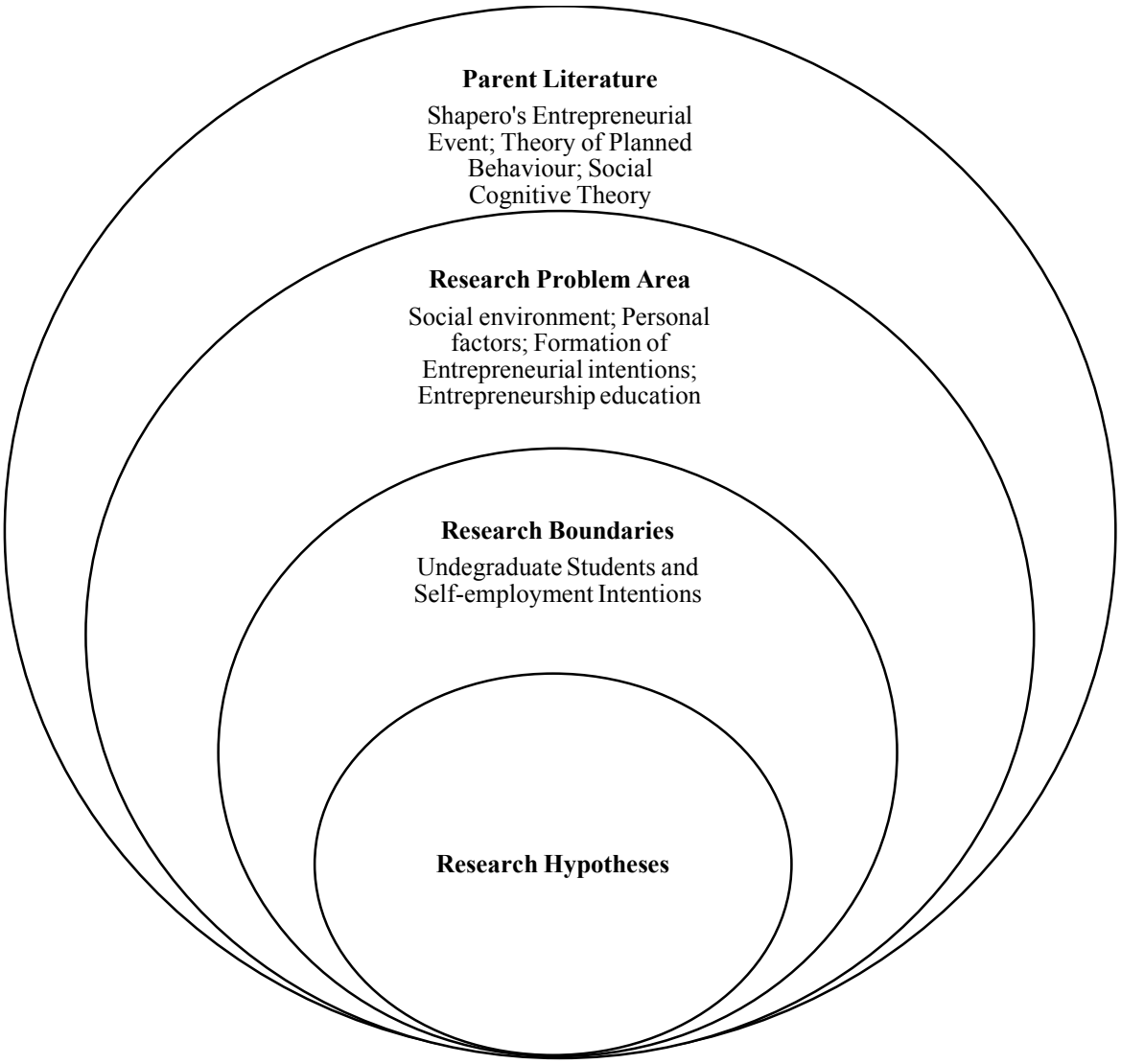


Figure 1.3 Model of Theoretical Framework

The model above in figure 1.3 is a theoretical framework that would guide the development of the next chapter (literature review of this thesis). The parent literature discusses the key theories

identified in the study within the research problem area. This would set out the research boundaries in order to develop key hypotheses from the syntheses of the literature.

1.6 Thesis Structure

This thesis is made up of six (6) chapters. A generic summary of each chapter is provided in this section.

Chapter 1 introduces the topic, the research context, and the rationale behind the study. It gives an overview of the fields of enquiry, entrepreneurship education and entrepreneurial intention, and a justification for the importance of the research.

Chapter 2 is a review of the literature on entrepreneurial intentions and entrepreneurship education. It initially discusses the foundation theories of entrepreneurial intentions by identifying key factors and themes in the literature regarding entrepreneurial intentions. A discussion of the existing entrepreneurship education program in Nigerian Universities is provided. This is followed by a discussion on entrepreneurship education and its components. The components were classified according to the priorities of entrepreneurship education programs. Finally, a conceptual framework has been developed with key hypotheses based on the discussion of the literature review. The hypotheses would be used to guide the methodology employed in the thesis.

Chapter 3 discusses the research methodology in general, and more specifically, current issues in entrepreneurship research. The research approach, justification for the use of quantitative

study is provided. Arguments are laid down to discuss the chosen research design and data collection procedures and techniques, which are self-administered questionnaires. A brief on the selected data analyses techniques are provided. A discussion of the validityand reliability of the procedure is given. The selected sample groups and the control groups are also explained and an outline of the research process. The ethical considerations for the study are also given.

Chapter 4 contains the findings of the study. An outline of the preliminary data and statistical analyses were conducted to develop findings. These findings were compared in regards to prior research.

Chapter 5 provides a discussion of the findings developed in chapter 4. The discussion is made by highlighting the position of this study within the field of entrepreneurship education research based on the conceptual framework of the study. This is followed by the theoretical and practical implications deduced from the discussion.

Chapter 6 based on the discussions in chapter 5, Chapter 6 presents a number of conclusions that can be drawn from this research. The limitations of this research are also included, as are areas for future research that could provide more insight into this topic. The chapter also examines the overall outcomes of the research and how these make a knowledge contribution to the fields of entrepreneurship education and entrepreneurial intentions.

CHAPTER 2 LITERATURE REVIEW AND THEORETICAL DEVELOPMENT

Introduction

This chapter discusses the elements of the key theories guiding the formation of entrepreneurial intentions. Reviews of the literature on these elements in regards to the individual's social and personal factors are discussed. This includes a discussion of the context of entrepreneurship education in Nigerian Universities and the components of these programs in the field of research. Then the boundaries of this research are discussed in light of students' entrepreneurial intention in Nigerian Universities. Finally, a conceptual framework is developed with specific hypotheses from the overall review of the literature.

2.1 Foundation Theories of Entrepreneurial Intentions

Traditionally, human behavior has been viewed to be shaped from one-sided causation by the interaction between an individual's personality and the environment (Osipawo, 1990; Lent and Hackett, 1994). That is, human behavior results due to the worldwide stable personal features. This view limits understanding the whole interaction that takes place between developing individual and the evolving environment (Lent et al., 1994). However, according to social cognitive theory on figure 2.1 below suggest that an individual's behavior could result from a reciprocal causation among behavior **(B),** cognitive and other personal factors **(C)**, and environmental events **(E)**.

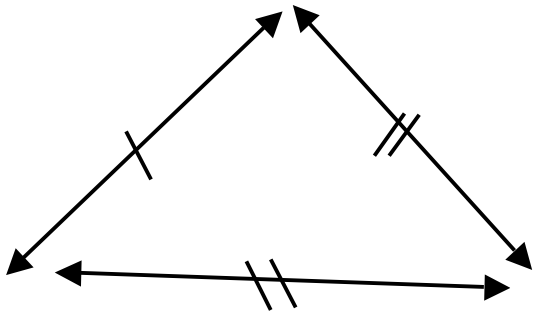


Figure 2.1Relationship among Behavior (B), Cognition (C), and Environment (E)

Source: Wood and Bandura (1989)

According to figure 2.1 above, all factors are interlinked and influence each other in a three-way reciprocation approach (Bandura, 1986; Wood and Bandura, 1989; Chen et al., 1998). Wood and Bandura (1989) suggest that it is mainly through an individual's actions with the external environment that people may influence a particular situation, in another way affects people's thoughts in terms of their cognition, and also influence any consequent behavior. The theory provides the basis for understanding and explaining different kinds of individual behavior. Added to that, it is also important for identifying approaches that could allow the individual behavior to be modified (Pajares, 1997).

Social cognitive theory could be viewed as the study of the way in which learning may take place through modification of one's mental state. In that base, educators design learning interventions that may result to an individual's improvement or changes through their motivation by exposing them to certain knowledge, skills, and resources (Anderson, 2000; Zhao et al., 2005). This modified mental state could result to an entrepreneurial behavior such as creating

new business ventures. The decisions to create these ventures were processed through the individual's entrepreneurial intentions that occurs priorthe entrepreneurial behavior (Linan et al., 2011). An individual's entrepreneurial intentions could be understood through Shapero and Shokol's (1982) entrepreneurial event model and Ajzen's (1991) theory of planned behavior. These models provide a good explanation and bases on the formation of entrepreneurial intentions while considering the importance of an individual's exposure to learning through Bandura's (1997) social cognitive theory above.

2.1.1 Shapero and Shokol's (1982) Model of Entrepreneurial Event (SEE)

The model of entrepreneurial event described that initiating an entrepreneurial behavior could be a function of the presence of a credible opportunity that depends on the perception of desirability and feasibility for that act. It views perceived desirability as the perceived attractiveness (equally personal and social) of becoming an entrepreneur, and perceived feasibility (equally personal and social) as the extent to which an individual feels capable of becoming an entrepreneur.

2.1.2 Ajzen's (1991) theory of Planned Behavior (TPB)

This theory was a psychological perspective grounded in entrepreneurship research (Fayolle and Gailly, 2013).It states that entrepreneurial intention is determined by attitude towards the behavior, subjective norm, and perceived behavioral control. Attitudes towards the behavior refer to the individual's personal attraction of becoming an entrepreneur. Subjective norm refers to an individual's perception of key people in their lives regarding creating a business, while perceived behavioral control reflects to an individual's perceived capability to create a new business effectively (Ajzen, 1991).

The fact that two scholars from distinct academic disciplines produced very similar theories(SEE and TPB) could determine the value of intention models. Nonetheless, they provide comparable interpretations of entrepreneurial intentions (Krueger et al., 2000; Krueger and Brazeal, 1994; Fayolle et al., 2006; Linan et al., 2011; Schlaegel and Koenig, 2014; Karimi et al., 2016). Notably, Krueger et al (2000) tested the theory of planned behavior and model of entrepreneurial event and found that they complement each other. These authors tested and validated the models on students in the United States of America. They demonstrate that the concept of attitude and subjective norm are interrelated with perceived desirability because they describe the motivation for an individual's personal interest towards various acts. In addition, it was also found that perceived behavioral control could be related with perceived feasibility. Boyd and Vozikis (1994)pointed out that perceived behavioral control could be similar to entrepreneurial self-efficacy as they both explain the perception of one's capabilities to engage in specific activities. More recently, Schlaegel and Koenig (2014) meta analytic test of 98 studies and also found a support for the two competing theories of entrepreneurial intentions. Fayolle et al (2006) also provided more evidence of the models on French students. Karimi et al (2016) further suggested that entrepreneurial intention models tested on Iranian students could be applicable on developing countries. In this regard, the variables within the entrepreneurial intention models could also be tested in the Nigerian context in order to validate the existence of the similarities in the intention models discussed.

Therefore, the two elements - perceived desirability for entrepreneurship and entrepreneurial self-efficacy would be further discussed in **section 2.3.3** in order to understand their influence on an individual's entrepreneurial intentions in Nigeria.

Table 2.1Categories of Factors Associated with Cognitive Measurement

Types of Factors	Definition	References
Cognitive process		
Perceived Desirability for Entrepreneurship	The perception of increased attractiveness or desire to engage in entrepreneurship	Krueger et al (2000); Carter et al (2003); Segal et al (2005); Saeed et al (2014).
Entrepreneurial Self efficacy	The perception of capabilities to engage in entrepreneurship	Chen et al., (1998); Zhao et al (2005); Piperopoulos and Dimov (2014)
Social factor		
Role models	Specific important individuals that a person looks up to for inspiration, or interacts with for obtaining advice and encouragement.	Scherer et al (1989); Gibson (2004); Van Auken (2006); Linan and Chen (2009); Mueller et al (2011).
Institutional environment	A country's public and private structures established to develop knowledge and skills that could result to the most economic and social advantage for the individual.	North (1994); Turker and Selcuk (2009); Kraaijenbrink et al (2010); Bosma et al (2012); Saeed et al (2014).
Personal factors		
Psychological Attributes		
Locus of Control	The individual attributes the reason for certain occurrences with oneself or the external forces.	Gist and Mitchell (1992); Rotter (1966); Chen et al. (1998); Hansemark (1998)
Need for Achievement	The motive to accomplish something in a better way.	McClelland (1964); Robinson et al (1991); Hansemark (1998)
Tolerance for ambiguity	The response an individual gives to uncertain situations	Douglas and Shepard (2000); Katz (2001); McMullen and Shepard (2006)
Risk-taking propensity	The perceived probability of obtaining rewards from accomplishing a task that is associated with high consequence of failure more than the perceived reward	Brokhaus (1980); Ho and Koh (1992); Zhao et al (2005); Altinay et al (2012)
Behavioral approach	Concerned with how entrepreneurs behave in the entrepreneurship process	Shane and Venkataraman (2000); Garner (2004)
Educational Factors- Entrepreneurial Education		
Exposure to broad knowledge and skills	Exposure that provides valuable knowledge to an individual to become useful	Bandura (1997); Peterman and Kennedy, 2003; Fayolle et al (2006); Karimi et al (2016)

Table 2.1 summarizes these elements. The interaction created by these forces could influence the individual's learning experiences and behavior (Garo et al., 2016) such as engaging in

entrepreneurial activities.For example, an individual's behavior such as career selection (Dyer, 1994; Autio et al., 2001;Wu et al., 2008; Linan et al., 2009;2011; Engle et al., 2010; Fayolle and Gailly, 2013; Nabi et al., 2016) might affect how one perceives oneself and the environment such as one's psychological attributes and demographic characteristics. In turn, how a person perceives oneself might affect his orhers perception of the environment, and could influence one's behavior such as the perceptions of one's role models or support of one's family, or available resources networks. It is necessary to understand that the relationship between an individual's cognition, behavior, and environment do not have the same strength, and the reciprocating relationship occur at different times (Wood and Bandura, 1989; Glanz et al., 2002), such that delay(s) due to the nature of the environment and intervening factors might exist for changes in the individual's behavior to take place. This thesis focuses on the entrepreneurial intention viewed as one's decision to become self-employed (Linan et al., 2011). The formation of entrepreneurial intention is associated with some personal and environmental (social) factors, within which the influence of entrepreneurship education is highlighted. This is an integral part of this thesis to be discussed in the next sections.

2.2 Social Factors

From an individual's social environment factors, may include the role model(s)' influence, and the institutional environment. These factors provide an explanation into entrepreneurial activities.

The institutional environment could be described as a country's public and private structures established to develop knowledge and skills that could result to the most economic and social advantage for the individual (Engle et al., 2010; Bergmann et al., 2016).Factors influenced by

policies might take years or decades for changes in an individual to occur that it may not be felt within the short term in a society (Wang and Gooderham, 2014; Malebana, 2015; Saeed et al., 2015). Wang and Gooderham (2014) argued that these changes in the form of entrepreneurial mindsets of individuals within a region could be due to the independent reinforcement of their regulative, normative, and cultural- cognitive system that make up a strong societal framework.

In Nigeria, public institutions such as SMEDAN (SMEDAN, 2016) and the Bank of Industry (BOI, 2016) provide and facilitate financial, infrastructural support, and capacity building for micro small and medium enterprises in the country.Therefore, the role these structures play in the decision to become an entrepreneur might not be immediate. Nevertheless, they provide important support and enabling environment to the educational system that is encourage students to shape their entrepreneurial mentality.

Meanwhile, one's family experiences could be formed over the medium term (Bosma et al., 2012). Therefore, it is clear within the boundaries of this study to discuss entrepreneurial intentions of students in relation to the immediate social factors such as one's role models.

Role Models

It has been acknowledged that role models may play major roles in influencing a person's career decisions. (Scherer et al., 1989; Van Auken et al., 2006a; 2006b). Role models may contribute to developing the interest of pursuing self-employment and developing the self-efficacy of a person (Bosma et al., 2012). Role models could be referred to as the specific important individuals that a person looks up to for inspiration, or interacts with for obtaining advice and encouragement (Scherer et al., 1989; Gibson, 2004; Van Auken et al., 2006; Linan and Chen, 2009; Mueller et al., 2011). Gibson (2004) described the term role model based on the two theoretical constructs:

role and the probability of an individual to be associated with other individuals with the aim of modelling, matching of one's cognitive skills and the behaviour of the observed person by the individual. Bosma et al (2012) argued that a person could likely be interested in the activities of the role model who they perceive to share similarities in their characteristics and goals, and are able to learn valuable knowledge and skills from. In this view, Van Auken et al (2006) added that the categories of relationship between role models and individuals revolve around issues such as personal involvement, mentoring, employment, observation, and discussion. Social cognitive theory supports these statements that individuals are assumed to learn in a social environment through learning by example from people they identify with (modelling) (Bandura, 1997).

Previous research have shown strong links between growing up among entrepreneurial role models and the tendency to start one's own business than working for someone else. This could be in form of direct family members with business, friends or peers, boss in the workplace, or a prominent entrepreneurial figure (Scott and Twomey, 1988; Scherer et al., 1989; Krueger, 1993;Dyer, 1994; Linan et al., 2005; Van Auken et al., 2006; Linan and Santos, 2007; Linan, 2011; Bosma et al., 2012).

Scherer et al (1989) found that children who have parents as entrepreneurs are likely to follow suit from an early stage. It was also found that having the role model was more important than the performance of the role model. Van Auken et al (2006) furthered this investigation on 82 students and found that role models with positive influences have higher impact on their children's future career, while negative influences have a lesser impact. Baucus and Human (1994), further argued that even individuals that have parents that perform poorly are likely to be

attracted to entrepreneurship, might be they can comprehend the risks, challenges that come part and parcel with the concept of entrepreneurship.

BarNir and McLaughlin (2011) studied the effects of parental self-employment on different start-up activities related to planning and organization, and on funding structure. It was found thatpositive relationships exist between parental self-employment and early utilization of start-up activities and a positive relationship between parental self-employment and seeking informal external funding. It was also found that women are more likely to make use of personal savings, while men are more likely to use external informal funds.

The ability to engage in planning, organizing and obtain funding through parents provide sources of enactive mastery, role modelling, and psychological reactions that define the level and strength of self-efficacy an individual has on career choices, and activities: by seeing similarities of self with that of the role model and in turn persist in efforts to be like the model (Bandura, 1986).

On the other hand, Franco et al (2010) argued that the influence of an individual's family and peers might not be important in the decision to become an entrepreneur as suggested by other studies. The author suggested that it may be due to the negative perceptions developed from the entrepreneurial experiences of such individuals that may be viewed as unimportant. This is supported by the view of Mungai and Velamuri (2009) that students create a distinct view of their parents that are into self-employed jobs. For instance, Wang and Wong (2004) suggested that the children may be highly motivated through other approaches and render their family's wealth as a burden rather than a support.

In some cases, the role models celebrated in the society could also be important for the individual to observe and emulate their characters. This could be typical of prominent business tycoons in Nigeria such as the Dangote Group. Their entrepreneurial journeys and success stories are regarded as important points of reference for youths by entrepreneurship educators in Nigerian institutions (Akinyoade and Uche, 2016).

As it been agreed that the availability of an entrepreneur within one's immediate social environment is important in forming entrepreneurial intentions (Van Auken et al., 2006; Linan et al., 2011), In this regard, it may be reasonable in this thesis to measure the entrepreneurial knowledge of the student to identify its influence on entrepreneurial intentions.

2.3 Personal factors

The personal factors could be understood from the trait approach and an individual's cognitive process. The trait approach has contributed to understanding the difference between entrepreneurs and non-entrepreneurs (Krueger et al., 2000), while the cognitive process could be understood through the beliefs, attitudes, and thoughts in ascertaining the reasons why entrepreneurs behave in a specific way (Kolevereid, 1996; Saeed et al., 2014). In order to understand the influence of an individual's personal factors, the contribution of the trait approach and behavioral process in entrepreneurship research would be discussed followed by discussing the cognitive process. It should be noted that according to key entrepreneurial intention studies, it has been suggested that trait, demographic, or behavioral factors are generally important to entrepreneurship, they provide lesser explanatory powers in the formation of entrepreneurial intentions than cognitive approach (Krueger et al., 2000; Schlaegel and Koenig, 2014). For example, (Gartner, 1985, c.f Linan et al., 2011) claimed that as individuals vary, an average

entrepreneur may not exist, and thus an average profile of entrepreneurs would be difficult to ascertain. However, a background understanding of certain personal attributes of the individual might be important in understanding key entrepreneurial attitudes and beliefs.

2.3.1 Trait Approach

The trait approach has been researched in entrepreneurship literature in order to differentiate between entrepreneurs and non-entrepreneurs. Chell (2000) suggest that it is not clear as to the exact period at which these psychological attributes develop within the entrepreneurial process. In addition, some entrepreneurs may possess some of the psychological attributes not primarily all identified in entrepreneurship literature, that leads us to the conclusion that there is not a particular stereotype of personality model that fits an entrepreneur. In this regard, the popular entrepreneurial psychological attributes discussed in entrepreneurship literature could be identified as; Locus of control, need for achievement, risk-taking propensity, and self-confidence their contribution to entrepreneurship would also be summarized.

Locus of Control

Locus of control is the general belief that whether outcomes are a result of one's behavior (internal locus of control) or external forces (external locus of control). It could be understood as when the individual attributes the reason for certain occurrences with oneself or the external forces. The theory of locus control was developed by Rotter (1966) followed by subsequent studies on the suitability of the construct in relating it to developing entrepreneurial spirit (Bird, 1988; Gist and Mitchell, 1992; Chen et al., 1998; Hansemark, 1998; Cromie, 2000). Bird (1988) found that entrepreneurs have the tendency to relate their outcomes to their own actions rather than pressures from the society. In other words, the study revealed that entrepreneurs develop

higher internal locus of control than external locus of control. In contrast, other studies did not find positiveness of this psychological construct in entrepreneurs (Sexton and Bowman, 1985; O'Gorman and Cunningham, 1997), that it could be concluded that as internal locus of control could differentiate the entrepreneur from the population at large, this trait may not always be consistent in showing a difference with managers. Chen et al (1998) found self-efficacy to be a better construct than locus of control to differentiating the entrepreneur from business manager. The study concluded that the main contrast is that locus of control constructs largely explain numerous situations or settings, while self-efficacy considers specified tasks and roles, assessing one's belief that he or she has the capability perform specific tasks with a particular level of skill.

Need for achievement

The construct need for achievement is regarded as a major influential element behind human action (McClelland, 1964). It has been known to be associated with entrepreneurship for a long time (Shaver and Scott, 1991). It could therefore be described as the motive to accomplish something in a better way (McClelland, 1964; Hansemark 1998). It has been found that need for achievement might be higher in entrepreneurs than non-entrepreneurs (Robinson et al., 1991; Koh, 1996). (Saeed et al (2014) suggested that entrepreneurs show that profit could be a measure of success. It is the need for achievement that drives these individuals. In McClelland's study, Individuals with higher need for achievement show commitment and dedication towards their behaviours. It was further found that these individuals also developed a higher need for dominance and control, that could be related to what the business manager exhibits. These provide sufficient evidence that achievement motivation could be taught in entrepreneurship program (Henry et al., 2005) However, need for achievement has been found to be an exogenous variable that influences entrepreneurial intention through one's attitudes (Krueger et al., 2000),

and therefore does not have a direct influence on entrepreneurial intention. That said, the attitudes that influence entrepreneur intentions would be discussed in detail in the next section.

Tolerance for ambiguity

This specific psychological attribute could be related to how an individual responds to uncertainty (Katz, 2001). Individuals with low tolerance could experience difficulties in regards to uncertainties that may occur, while individuals with high tolerance may view uncertainties as positive cues for inspirations. Douglas and Shepard (2000), McMullen and Shepherd (2006) suggest that in entrepreneurship literature, response to uncertainties from an entrepreneur's point of view may relate to the willingness of an individual to bear uncertainties as an attitude towards taking risks through the motivation and knowledge in pursuing those uncertainties. McMullen and Shepherd (2006) further argued that the willingness to respond to the perception of uncertainties that relate to new venture creation could be viewed as a belief- desire triangle similarly found in entrepreneurship intention models. In other words, the desire to engage in an entrepreneurial act is dependent on the individual's motivation and, belief in the ability to engage in the entrepreneurial action is dependent on knowledge. The construct of tolerance for ambiguity could also be associated with the risk-taking propensity of the entrepreneur. Risk-taking propensity would be summarized below.

Risk-taking Propensity

Risk-taking propensity could be described as the perceived probability of obtaining rewards from accomplishing a task that is associated with high consequence of failure more than the perceived reward (Brokhaus, 1980; Ho and Koh, 1992; Brice, 2002; Zhao et al., 2005; Altinay et al., 2012).

Risk-taking propensity is regarded as a key characteristic of an entrepreneur (Koh, 1996; Altinay et al., 2012). It was found that students that have higher levels of risk-taking propensity have higher tendency to create their own business ventures. (Koh, 1996; Ang and Hong, 2000; Gurel et al., 2010). In contrast, Altinay et al (2012) found a positive relationship but not significant between risk taking propensity and entrepreneurial intentions. The study was conducted on university students studying hospitality that seem to demonstrate a lesser risk propensity than other disciplines incorporating higher risks in technology and innovation. Chen et al (1998) suggested that risk taking may contribute to measuring entrepreneurial self efficacy in addition to carrying out various tasks in marketing, innovation, management, and financial control, Thus, it could be suggested that risk-taking as an element of self efficacy could be taught (Henry et al., 2005).

In summary, the trait approach has made significant contribution to entrepreneurship research, though it has been agreed by scholars that a specific personality profile of the entrepreneur may not exist (Gartner, 1998;2004; Chell, 2000) as the attributes develop across the entrepreneurship process. Hence, stable personality characteristics are not the focus of this research.

Shaver and Scott (1991) posit that the psychological approach in entrepreneurship research has progressed from studying personality attributes to investigating behavior, motivation, and cognition. It is now complex and adopts perceptual and situational variables, which is the favored approach in this thesis. Foundational cognitive theories of Shapero and Sokol (1982), Ajzen (1991), and Bandura (1986) were discussed earlier in section 2.1 of this thesis. In order to understand the cognitive processes, which are the focus of this thesis, it is important to provide a brief highlight on the behavioral perspective of the entrepreneur in the next section.

2.3.2 Behavioral Perspectives

Entrepreneurs have been viewed as particular set of individuals that possess the ability to identify and exploit viable opportunities. This esteemed behavior captivated the attention of research into investigating the nature of new venture creations (Bygrave and Minniti, 2000; Gartner, 2004).

Several setbacks were demonstrated with the behavioral approach mainly because of the lack of the approach in explaining the unobservable behaviors of an entrepreneur, that moved focus to understanding cognitive processes to investigate unobservable behaviors associated with perceptions and motives (Good and Brophy, 1990; Krueger et al., 2000). Investigation into the motivation and goals that drives the entrepreneur is limited (Kolevereid, 1996; Saeed et al., 2015). Having said that, based on cognitive measures, there is also a need to understand the antecedents of the individual's decision to behave entrepreneurially in different contexts need further investigation.

While the trait approach focused on ***who is an entrepreneur*****,** cognitive approach is associated with the **determinants to entrepreneurial behavior**, and the behavioral approach places importance to ***what exactly entrepreneurs do***. Gartner (1989) posited that it is necessary to understand the roles and accomplishments adopted by entrepreneur during new venture creation. For example, Brockhaus (1980) focused on successful versus unsuccessful entrepreneurs; Carland et al (1984) looked at entrepreneurs versus small business owners; Cromie and Johns (1983) focused on entrepreneurs versus managers. The samples primarily adopted in these studies consist of individuals already with new or established businesses in the entrepreneurial process. The focus of this thesis is on the antecedents of entrepreneurial intentions that are formed prior to actual behavior, which could be best explained by cognitive approach to

entrepreneurship. This has been highlighted earlier in the intention models in **section 2.1** of this chapter (Ajzen, 1991; Shapero and Sokol, 1982; Krueger et al., 2000; Karimi et al., 2016). The process by which these specific antecedents resonate within this research would be highlighted in the next section.

2.3.3 Cognitive processes

The intention behavioral models are central to the research in this thesis and the introductory cognitive theories developed by Shapero and Sokol (1982), Bandura (1986), and Ajzen (1991) were previously elaborated in chapter 1 and section 2.1 of this chapter. Cognitive process is more concerned with how entrepreneurs think, and this would provide explanations into why some people become entrepreneurs and why others with same exposure do not (Krueger et al., 2000; Mitchell, 2007). The main concepts in entrepreneurial cognition could be the level of beliefs and perceptions from heuristics and judgments (assessments) and knowledge of an entrepreneurial setting (Mitchell et al., 2002). This follows with the highlight that perceived desirability for entrepreneurship may be a proxy for an individual's attitudes to wards entrepreneurship, while entrepreneurial self-efficacy could be a proxy for general self-efficacy and perceived feasibility for entrepreneurship (Krueger et al., 2000).

The next section would discuss how entrepreneurial intention is formed from perceived desirability and entrepreneurial self-efficacy.

Perceived Desirability

Perceived desirability of entrepreneurship could be described as the increased attractiveness or desire for engaging in self-employment (Krueger et al., 2000; Carter et al., 2003; Segal et al.,

2005; Saeed et al., 2014). Also, it could be signified by the important reasons nascent entrepreneurs provide that greatly influence their decisions for becoming self-employed (Shook et al., 2003; Carter et al., 2003; Saeed et al., 2014).

Kolevereid (1996) studied the preference of self-employment over organizational employment 372 Masters students. He hypothesized 11 reasons for making a professional choice; security, economic opportunity, authority, autonomy, social environment, work load, challenge, self-realization, participation in the whole process, avoid responsibility, and career. The studies found that the need for a secured life, workload, and autonomy are the three most important reasons for people's employment status preferences. It was also found that self-employed individuals were more likely to choose economic opportunity, authority, autonomy, challenge, self-realization, and participate in the whole process when compared to individuals choosing organizational employment. Carter et al (2003) also compared potential entrepreneurs and non-entrepreneurs, based on the reasons for their careers preferences. It was found that there were no significant differences on self-realization, financial success, innovation, and need for independence among the two groups, but potential entrepreneurs were less likely to pursue recognition.In contrast, Saeed et al (2014) found that the need for recognition and playing a role were also important desires an individual has in deciding to become self-employed in a study of 805 students. Souitaris et al (2007) notably found that science students who were exposed to entrepreneurial activities as an intervention developed higher attitudes towards becoming entrepreneurs than students who did not.

In this regard, it may be suggested that the more important an individual sees the motivations above when deciding to become self-employed, the more likely the individual would engage in self-employment. Overall, it appears that the need for self-realization, financial success, innovation, recognition, role, and independence could serve as good measures of perceived desirability (Saeed et al., 2014). The construct perceived desirability is important for this thesis, as it could be measured to provide an explanatory power into how entrepreneurial intention of Nigerian University students are formed.

Entrepreneurial Self-efficacy

Earlier in section 2.1, it was highlighted that the construct entrepreneurial self-efficacy could stand to be a better measure of entrepreneurial tasks than the general self-efficacy (Chen et al., 1998; Wilson, 2007). Chen et al (1998) defined entrepreneurial self-efficacy as the confidence in an individual's capability to successfully carry out entrepreneurial roles and tasks. Entrepreneurial self-efficacy can therefore be described as the perception an individual has about his or her capability to become self-employed.

The activities required of an individual to carry out when creating new business ventures could be revolved around innovation in recognizing opportunities, marketing and managing viable products, taking risks in uncertainties, and control limited financial resources (Chen et al., 1998; Saeed et al., 2014). Empirical research confirmed the importance of entrepreneurial self-efficacy construct in forming entrepreneurial intentions. Chen et al. (1998) and Zhao et al. (2005) found a positive relationship between entrepreneurial self-efficacy and intentions to create new business ventures. In Chen et al.'s (1998) study, it was found that individuals with higher levels of entrepreneurial self-efficacy had a higher probability to become entrepreneurs than those with

low levels of entrepreneurial self-efficacy. Piperopoulos and Dimov (2014), and Karimi et al (2016) also found that entrepreneurial self-efficacy of students in entrepreneurship education programs positively relates to their entrepreneurial intentions.

It may therefore be suggested that exposure to entrepreneurship educational experiences may play important roles in explaining entrepreneurial intentions through cognitive processes. One of the objectives of the research in this thesis is to examine the impact of entrepreneurship education on the entrepreneurial intentions of University students in Nigeria. The role played by entrepreneurship education in this thesis would be discussed in the next section.

2.4 Education

It has been acknowledged in previous research that participating in entrepreneurship education (EED) program plays a big role in influencing entrepreneurial intentions of individuals (Peterman and Kennedy, 2003; Fayolle et al., 2006; Souitaris et al., 2007; Linan et al., 2011; Rideout and Gray, 2013; Fayolle and Gailly, 2015; Nabi et al., 2017). Fayolle et al (2006) found that students who have participated in under graduate EED programs increased their entrepreneurial intentions. Entrepreneurial intention. In the context of this study, education could be described as the exposure that provides valuable knowledge and skills through reflective capacity development to an individual to become useful (Bandura, 1997; Peterman and Kennedy, 2003; Fayolle et al., 2006). It could therefore indicate that there is a strong relationship between education and intentionality. Souitaris et al (2007) suggested that students who passed through EED programs had higher attitudes, perceived behavioral control and entrepreneurial intentions than those who did not. It was also found that students gained the benefits of the EED program. Sanchez (2013) supported that EED raised the competence levels of students. Linan et al (2011)

also found that EED influenced students' perceived desirability for entrepreneurship. Here, it could be inferred that education increases the level of one's overall capabilities to perform specific tasks, which could be decisive in selecting the individuals' future career roles. However, other studies found that participating in EED lowers entrepreneurial intentions (Von Graevenitz et al, 2010; Oosterbeek et al., 2010; Walter et al., 2011; Chang and Ripple, 2015). This may suggest that the actual delivery of the EED program may have significant impact on entrepreneurial career intentions. Mueller (2011) found that some educational elements raise entrepreneurial intentions of students. Hence, in order to understand the offering of the EED programs, this study would investigate EED programs delivered in Nigerian Universities to provide insight into the approaches by which entrepreneurial intentions are formed. This entails reviewing the components of EED programs, which would be discussed in the next section.

2.4.1 Components of Entrepreneurship Education Programs

Entrepreneurship programs consist of components including its contents, teaching models and assessment methods designed to achieve the program objectives (Jones and English, 2004; Fayolle and Gailly, 2008; Mwasalwiba, 2010; Neck and Greene, 2011). These are the common elements found in an entrepreneurship curriculum. However, Maritzand Brown (2013)described entrepreneurship education from a generic perspective instead of a specific context by integrating outcomes and contexts into objectives. In their study, the links between the educational components in the framework were not aligned with regards to the objectives, contents, pedagogies, assessment methods, and audiences. The non-alignment of components may lead entrepreneurship education programs to deviate from achieving their set goals (Mwasalwiba, 2010). It was argued in (Hermann et al., 2008) that learning outcomes could be shared to reflect

intellectual consistency across the program. In general, the components of an entrepreneurship education program may be aligned to meet the goals of a course.

Furthermore, Matlay and Carey (2007) argued that differences in concepts and contexts might exist in the provision of entrepreneurship education program. In their longitudinal study of 40 Universities in the UK between 1995 -2004, it was found that in the first half of the period of study only 3 Universities provide entrepreneurship courses outside business schools specifically in computer and engineering faculties that comprised of mainly borrowed business management courses and the figure significantly increased between 2000-2004 with more precision on independent modules on entrepreneurship in the curriculum. It was also found that few Universities in Scotland and Wales perceived some regional and cultural factors were perceived to be barriers for entrepreneurship education. The study attempted to describe the main differences in EED programs, but there was no further categorization provided to fully understand the differences in EED concepts and contexts. The finding of Matlay and Carey (2007) in regards to different concepts of entrepreneurship education could give insight into why Mwasalwiba (2010) found that entrepreneurship education is the term used in America and Canada, while Enterprise education is used in United Kingdom and Ireland.

In a review of 108 entrepreneurship education articles, Mwasalwiba (2010) found that 32 percent of these articles relate entrepreneurship education to some educational or training process for the purpose of influencing individuals' behavior, attitudes, and intentions towards entrepreneurship career or to create value in the community – to create an entrepreneurial society, another 32 per cent view it in terms of acquiring personal skills in entrepreneurship, while 18 per cent relate it to new business formation, 9 per cent on opportunity recognition, and another 9 per cent

management of existing small businesses. It indicates that entrepreneurship education revolves around behavior change, and developing entrepreneurial skills.

This section would discuss in details the types of EED through their set objectives, teaching approaches, and assessment methods in order to show how participating in these programs forms entrepreneurial intentions of students.

2.4.2 Categories of Entrepreneurship Education

Entrepreneurship education objectives are the major elements that encompass other components of the program (Jones and English, 2004). Three purposes of entrepreneurship education have been identified in the literature: outlined them as education *about,* education *for* and education *in* entrepreneurship (Kirby, 2004; Co and Mitchell, 2006; Mwasalwiba, 2010; Yatu et al., 2016).

Table 2.2 Categories of Entrepreneurship Education

Type of entrepreneurship education	Objectives	References
1. Educate *about* entrepreneurship	To create awareness and develop positive attitudes towards of entrepreneurship in students	Kirby (2004); Henry et al (2005); Co and Mitchell (2006); Mwasalwiba (2010); Yatu et al (2016)
2. Educate *for* entrepreneurship	To develop skills and competence required to create new ventures	Kirby (2004); Henry et al (2005); Co and Mitchell (2006); Mwasalwiba (2010); Yatu et al (2016)
3. Educate *in* entrepreneurship	To encourage existing businesses towards innovation	Kirby (2004); Henry et al (2005); Co and Mitchell (2006); Mwasalwiba (2010); Yatu et al (2016)

Source: Synthesis from Literature

Education About Entrepreneurship

This type of education shapes students' minds to obtain a general knowledge and understanding of the entrepreneurship phenomenon (Henry et al., 2005a,b; Mwasalwiba, 2010; Yatu et al., 2016). Education *about* entrepreneurship places huge emphasis on the importance of becoming an entrepreneur in the society by sensitizing individuals to understanding the concepts, value, characteristics attributed to the entrepreneur. These types of education also known as awareness education (Linan, 2007) allow individuals to view self-employment as a possible option of career (Maritz and Brown, 2013) there by increasing the amount of potential entrepreneurs in the society. Peterman and Kennedy (2003), Fayolle et al (2006), Souitaris et al (2007), Fayolle et al (2015), Karimi et al (2016), Nabi et al (2016) in their studies of the impact of entrepreneurship education found that exposure to EED have an impact on entrepreneurial intentions and subsequently behaviors of individuals.

Education for Entrepreneurship

This type of education develops in the student the required competencies, skills to start a new business venture (Henry et al., 2005a,b; Co and Mitchell, 2006; Mwasalwiba, 2010; Yatu et al., 2016). Educating *for* entrepreneurship places focus on exposing the potential and new entrepreneurs to the practical aspects of starting new businesses such as how to identify opportunities, sourcing for start-up capital, awareness of regulation, market and manage the viable product or service, and maintain useful social network (Linan, 2007; Matlay and Carey, 2007; Mwasalwiba, 2010). In the process of carrying out the practical aspects of entrepreneurship, the individual demonstrates: personal entrepreneurial skills in opportunity recognition, risk-taking, innovation, leadership, and persistence, problem solving, analytical and networking, and business management skills in operations, marketing, human resource, strategy,

and finance (Noll, 1993; Henry et al., 2005a,b; Herman et al., 2008; Draycott and Rae (2011). Here, it equips the individual to become an owner of a new business venture (Linan, 2007). Overall, education for entrepreneurship teaches the student real life aspects of engaging in entrepreneurship. It could be argued that entrepreneurship learning would occur among Nigerian University students when they become exposed to experiential learning experiences from EED programs. This would also provide an understanding of the impact of entrepreneurship education programs.

Education in Entrepreneurship

This type of education exposes the individual to the strategies of making the individual tobecome innovative in their abilities in running their existing businesses to ensure that they survive in the fierce business environment (Kirby, 2004; Hyitti and O'Gorman, 2004; Henry et al., 2005a,b; Co and Mitchell, 2006; Mwasalwiba, 2010; Yatu et al., 2016). Individuals with established businesses are required to update their entrepreneurial skills through undertaking courses in innovation, specific product and market development, marketing, human resource and capacity development, operations management and business strategy (Henry et al., 2005a, b; Co and Mitchell, 2006). Education in entrepreneurship might be necessary after the business start-up phase specifically for established businesses (Linan et al., 2007; Mwasalwiba, 2010). This type of EED has clearly shown that its target audience is for existing business owners, which is beyond the scope of this study. It is important to include the right target audience when developing EED programs (Fayolle et al., 2006).

In this study, it could the argued that exposing University students in Nigeria to learning experiences relating to the attitudes, values of entrepreneurship might have influence on their

career decisions. The EED program delivered in Nigerian Universities is to develop entrepreneurial spirit in its students by creating awareness of entrepreneurship in order to develop positive attitudes, entrepreneurial knowledge, and skills to view self employment as a viable career option than working under someone (NUC, 2011). The aim of the EED clearly resonates with raising entrepreneurial intentions of students by exposing them to scenarios that the students would perceive entrepreneurship desirable and feasible (Linan et al., 2011). This study measures participating in EED as a construct that has influence on students' entrepreneurial intentions.

2.4.3 Teaching Approaches

In understanding the various types of entrepreneurship education, teaching approaches used to deliver entrepreneurship to students in achieving the aim of the specific entrepreneurship education.

In educating *about* entrepreneurship, the main purpose is to create a general awareness of entrepreneurship. Heinonen and Poikkijoki (2006) adopted the use of group work, discussing with guest lectures, summary writing from literature on issues and effects of entrepreneurship in different societies to provide the theoretical knowledge of entrepreneurship to be evident in practice. Izquierido et al (2007) added that role play in games with mini-start-up initiated, cases and videos aid in imparting key capabilities and change of attitude towards entrepreneurship in students. More recently, Balan and Metcalfe (2012) added that poster presentation, team-based learning, and small business awards to students serve as important approaches that teach students *about* entrepreneurship. However, the choice and application of instructional approach to

teaching *about* entrepreneurship could vary according to the objective of the entrepreneurship curriculum (Matlay and Carey, 2007; Blenker et al., 2008; Mwasalwiba, 2010; Yatu, 2016).

On the other hand, entrepreneurship education programs that aim towards educating *for* entrepreneurship employ a more interactive approach to learning because it provides students with hands- on activities to learn to start up their own businesses. Hindle (2007) argued that teaching methods could be developed to encourage students' engagement in real life situations in order to develop learner's creativity, imagination, and risk-taking abilities. This resonates with the view that theoretical- based learning could be important in entrepreneurship education by complementing it with learning by doing activities that engage and develop potential entrepreneurs (Fiet, 2000a; Zahra and Welter, 2008; Jones and Iredale, 2010; Balan and Metcalfe, 2012). In this view, it was proposed that activities such as writing a business plan, attending entrepreneurship workshops, computer-simulations in incubators, small business awards, industry-visits, team learning, presentations in class could be regarded as major learning by doing activities that educate for entrepreneurship (Tan and Ng, 2006; Sherman et al., 2008; Solomon, 2008; Mwasalwiba, 2010; Caseiro and Albero, 2013).

Nevertheless, entrepreneurship education programs that educate students *in* entrepreneurship through developing innovative established business owners make use of more intensive approach to deliver these programs.

Kirby (2004) and Mwasalwiba (2010) argued that teaching approaches used to educate *for* entrepreneurship could be used to teach *in* entrepreneurship because when educators engage students in real-life scenarios in the form of new ventures, they become equipped with some business management skills that may ensure the new business owner growth and survival among competitors. This reflects Adler and Kwon's (2002) view that maintaining important social

capital is necessary for the entrepreneur especially in opportunity recognition, in this case could be for diversifying business opportunities. Therefore, it could be argued that attending entrepreneurship workshops or conferences, presentations, teamwork, and class lectures for discussing growth models could be important approaches for educating students *in* entrepreneurship.

In regards to the choice of pedagogical approach, the EED program investigated in this study in Nigerian Universities are mainly delivered by class lectures, mentoring students in designated enterprise centers or existing businesses. Entrepreneurial guest speakers in the form of local entrepreneurs also hold interactive discussions with students about their entrepreneurial experiences, answering questions, and giving advice.

In the case that understanding of entrepreneurship concept is the focus of a program, theoretically based teaching approaches are frequently used by entrepreneurship educators, while learning by doing activities are more used to achieve students' engagements (Mwasalwiba, 2010; Balan and Metcalfe, 2012).

2.4.4 Assessment Approaches

Depending on the priorities of the entrepreneurship education program, assessment approaches may be developed to achieve the objectives of the program. Students' performance could be assessed either in an objective or also subjective approach (Pittaway and Edwards, 2012) through critiquing their business plans and reflections. Lourenco et al (2013) added that it could be viewed from the perspective of cognitive and constructivist learning that could lead to changing

attitudes by adopting the use of assignment through poster presentations of in-class activities, and developing a working business plan.

In this regard, education *about* entrepreneurship may likely favor objective methods of assessments in achieving its objective such as tests and exams, while education *for* entrepreneurship may be achieved through subjective methods such as critique of working business plans, reflections poster presentations, and developing a working business plan, and finally education *in* entrepreneurship may combine the mix of some objective and subjective methods of assessments.

The EED program in this study primarily assess their students through both objective and subjective methods with assignments, end of semester exams, and group-based presentation of business plan developed during the program. As part of the steps in examining the existing entrepreneurship curriculum used in Nigerian Universities, methods of assessment of EED program in the Universities would be derived from the perspectives of the educators.

We know that an individual's attitudes and intentions towards behavior are determined by one's perception and as such could be influenced (Ajzen, 1991). Hence, entrepreneurship education is a tool that can influence a person's attitudes, entrepreneurial self-efficacy, and intentions (Souitaris et al., Linan et al., 2011; Fayolle and Gailly, 2013; Shinnar et al., 2014; Nabi and Fayolle, 2016). It is also clear in research that students who have participated in EED programs are significantly different from those that have not. Souitaris et al (2007) studied the attitudes and entrepreneurial intentions of 250 students and found that the attitudes and entrepreneurial intentions of the experimental group were raised than the control group. Sanchez (2013) added

that the competence and entrepreneurial intentions of 347 students increased while 310 students in the control group did not.

In the Nigerian context, studies focusing on the impact of entrepreneurship education with control groups are scarce. Majority of the studies are cross sectional in nature (Izedonmi and Okafor, 2010; Babatunde and Durowaye, 2014; Gerba, 2012; Oguntimehin and Olaniran 2017). For example, in a cross sectional study of 120 university students, it was found that the program enhanced students' decision towards an entrepreneurial career (Babatunde and Durowaiye,2014). However, previous entrepreneurship education scholars have criticized the use of cross sectional approach as standard methodologies in assessing impacts of entrepreneurship programs (Von Graevenitz et al., 2010; Sanchez, 2013; Martin et al., 2013; Rideout and Gray., 2013, Nabi et al., 2017). For example, Nabi et al (2017) in their recent review of 159 articles in entrepreneurship education field argued that studies employing cross sectional methods might make it difficult to fully assess the direct impact of entrepreneurship programs because of the absence of assessing the actual pre-program entrepreneurial intentions. In this case, there is still a need for more research using quasi-experiments with control groups in order to confirm the results of previous research across other contexts (Zhao et al., 2005; Souitaris et al., 2007; Fayolle and Gailly, 2013), in this case a developing country like Nigeria. This thesis would fill this gap by conducting this study in Nigerian Universities to examine the impact of a semester long compulsory entrepreneurship education program by comparing participants of the program with a non equivalent control group to check the differences in their entrepreneurial intentions.

2.4.5 The General Studies Entrepreneurship Program (GST) in Nigerian Universities

The aim of the GST entrepreneurship program is to encourage students to view entrepreneurship as a viable professional career by motivating them to create jobs themselves irrespective of their academic discipline rather than relying on government to obtain employable jobs. The program is offered to all third year students across all academic disciplines. According to the curriculum, an entrepreneurship center at each University has been designated to oversee the program.

In addition, a University is allowed to select two or three business ventures prevalent in the immediate environment. Overall, the program assesses students' knowledge on an individual and group basis.

Table 2.3 shows that the GST entrepreneurship program is categorized into two courses namely GST301 Entrepreneurship and Innovation followed by GST 311 business creation and growth. The objectives, contents, teaching and assessment approaches used at the stages are outlined.

Table 2.3General Studies Entrepreneurship Program in Nigerian Universities

Module	Contents	Objectives	Teaching methods	Assessment methods
GST 301 Entrepreneurship and Innovation	• Development of Entrepreneurship/Intrapreneurship • The Nigerian Entrepreneurial Environment • Creativity and Intellectual Rights • Technological Entrepreneurship • Management of Innovation • Family Business and Succession Planning • Women Entrepreneurship • Social Entrepreneurship • Business Opportunity Evaluation	• To provide practical guidance in order to understand critical aspects of entrepreneurship and key learning experiences in the Nigerian business environment, theories of entrepreneurship, concepts and management of innovation. • To develop attitudes, know-how, competencies, resources and network necessary to engage in various opportunities in entrepreneurship. • To introduce students to the key requirements for starting their own business ventures	Lecture ; Local-entrepreneurs	Assignments; Exams
GST 311 Business Creation and Growth	• Concept of Business and New value Creation • Theories of Growth: An Overview • Sources of Funds • Marketing • Ethics and Social Responsibility • Managing Transition: From start up to growth	• To prepare the students to be able to start and manage their businesses at the micro or family level by utilizing resources. • To make students recognize the need for growing and diversifying existing businesses • To expose students to management principles and best practice.	Class lectures, mentoring in business incubators/businesses	Group-based presentation of Business plan

On table 2.3 above, the course, GST 301 Entrepreneurship and Innovation provides an introduction to entrepreneurship. The objectives of the course are to develop the attitude, knowledge and skills required to start a new business. Course contents include development of entrepreneurship and intrapreneurship, Nigerian business environment, creativity, technology entrepreneurship, family business, women entrepreneurship, social entrepreneurship, and business evaluation. The main teaching approaches used to deliver the GST 301 course are through lectures and inviting local entrepreneurs to the program. Students are assessed through individual class assignments on 2000 words of critique of business plans and exams are also provided to the students to assess their knowledge of the course.

In addition, the next course GST 311 Business Creation and Growth is designed to develop the competence and confidence of students in starting their own businesses. The objectives of the course are to teach students to start and run businesses at various levels, to expose the student to the need to grow businesses through best practice management principles. Modules taught at this stage include concept of business and new value creation, theories of growth, sources of funds, marketing, ethics and social responsibility, managing transition. Class lectures mentoring and practical in businesses or incubators are the key methods used to teach the course at this stage. This course would be assessed on a group bases through written or verbal presentation of their business plans or opportunity.

2.5 Comparison of the Nigerian GST Entrepreneurship Program and Theory

The Nigerian course GST 301 entrepreneurship and innovation outlined above could be understood from the perspective of an Education *About* Entrepreneurship (Henry et al., 2005a,b;

Mwasalwiba, 2010; Yatu et al., 2016), in which Linan (2007) also categorized it as an Awareness Education (see section 2.4.2 of this chapter). According to these authors, the program offered to students within this stage could be described as an introduction to the phenomenon of entrepreneurship in order to provide a general understanding of entrepreneurship and shaping students' mindset towards considering self-employment as an alternative career rather than employable jobs. It is suggested that course contents that may aid to achieve the objective of such programs could be delivering key areas in terms of concepts, values of entrepreneurship, the characteristics of an entrepreneur, stories of successful entrepreneurs (Linan, 2007; Linan et al., 2011).

Here, the modules taught in GST 301 –to some extent may have covered the introductory knowledge required at the early stage. However, the modules 'business opportunity evaluation' and 'creativity' taught at this stage in the GST 301 course may be suggested to be required for teaching students how to start a business rather than creating awareness (Linan,2007). A business opportunity needs to be initially recognized from ideas within the environment prior to evaluation (Shane and Venkataraman, 2000). This may require an individual to exhibit a good level of creativity in generating or shaping these ideas emanating from the environment. In this case, at this early stage of entrepreneurship, it may not be suitable for the GST 301 course to introduce new entrepreneurship students to business evaluations techniques and creativity in parallel to encouraging them change their attitudes and mindsets towards entrepreneurship as a viable career option.

Furthermore, the use of class lecture and inviting local entrepreneurs (guest speakers) in the GST 301 course has also been suggested to be good teaching methods for creating an entrepreneurial awareness for students and changing their attitudes towards becoming self-employed

(Mwasalwiba, 2010).These methods are used to deliver scenarios of successful entrepreneurs, providing a good knowledge of how an entrepreneurship career can offer social and economic value to students, and observe the unique characteristics of an entrepreneur that may be distinct with a business manager (Henry et al., 2005a,b). However, it has been suggested that using role play in games, cases, videos, and poster presentations in teams may be other worthwhile approaches that could aid in changing students' attitudes towards entrepreneurship in students (Izquierido, 2007; Balan and Metcalfe, 2012).

In this case, the existing teaching approaches employed for delivering the GST 301 entrepreneurship course (class lectures and inviting local entrepreneurs) may be identified as good choices. However, considering the availability of variety of teaching methods highlighted by Izquierido (2007) and Balan and Metcalfe (2012), they may be insufficient in meeting the objectives of the program in Nigeria considerably. In regards to assessment, the use of summative methods such as tests and exams may be required to assess students objectively, subjective methods such as the critique and developing of working business plans, and reflections may be required to assess students subjectively (Pittaway and Edward, 2012). In this sense, the exams method used during the GST 301 might be appropriate at this stage. However, the critique of a business plan used for the course may be required at an advanced level that teach students how to start up their businesses.

On the other hand, the course, GST 311 course for business creation and growth could be understood from the view of Education ***for*** Entrepreneurship. This type of education allows the individual to learn the practical aspects of starting a business (Mwasalwiba, 2010; Yatu et al., 2016). These has also been classified as education for start up (Linan, 2007). The key skills that

are required for an individual to understand and learn in these programs are in the area of opportunity recognition, risk-taking, problem solving, leadership, networking, persistence, and business management (Johannisson, 1991; Henry et al., 2005a, b; Draycott and Rae, 2011). Students that participate in such programs are expected to have developed an awareness and positive attitude towards entrepreneurship.

In this case, the modules taught in the GST 311 course may have had some elements of how to start a business through – the concept of business and new value creation, ethics, sources of funds, marketing. However, important elements required for approaches of starting a business might be limited in the course such as developing networking events to develop students social network and capital, and the steps needed to set up a business in practice. These are known to serve as important indicators to learn in an entrepreneurship education program (Souitaris et al., 2007).

In addition to these indicators, the concept of business opportunity evaluation was introduced in the previous semester during the GST 301 entrepreneurship course. It would have been ideal to include opportunity recognition when teaching students how to start a business because the students would have the opportunity to develop their business ideas in parallel to understanding the steps for start-ups and by socializing more with other individuals in close networks.

Also, the concepts 'theories of growth' and 'managing transition' for business growth may be suitable for programs that focus on managing an existing business (Linan, 2007). In this case, the curriculum shows a huge emphasis on employing best practice management principles, thereby, showing less focus on the practical approaches of starting a business. Here, the outcome of the course could be students with business management knowledge because the development of enterprising skills in an individual could distinct the entrepreneur from business managers

(Henry et al., 2005a, b; Draycott and Rae, 2011). This shows that the existing GST 311 course may not be fit in developing students' enterprising skills necessary for starting their own business ventures in the future.

In regards to teaching approaches, it has been claimed that theoretical- based learning could be complemented with learning by doing activities that engage and develop potential entrepreneurs within entrepreneurship education programs (Fiet, 2000a; Zahra and Welter, 2008; Jones and Iredale, 2010; Balan and Metcalfe, 2012). This includes writing a business plan, attending entrepreneurship workshops, computer-simulations in incubators, small business awards, industry-visits, team learning, in-class presentations. In this case, the use of class lectures in the GST 311course might not be the most preferred teaching approach for this course at this stage compared to writing of business plans used during the GST 301 course. The use of a variety of approaches identified in the literature to improve real life situations for students have been limited within the existing programs in Nigerian Universities such as the mentoring and practicals conducted in the entrepreneurship centers.

In this regard, objective assessment used in GST 301 through exams and assignment may be important for developing the attitude for entrepreneurship. The concept of developing business plan is more efficient in developing students' entrepreneurial self efficacy than perceived desirability (Linan et al., 2011). In this sense, using business plans at the end of GST 311 program may aid in developing the required entrepreneurial skills needed to create new ventures. Lourenco et al (2013) argued using business plans would enhance their constructive learning.

Highlights of Social and Individual factors within Entrepreneurship Programs in Nigeria.

The existing GST program in Nigerian Universities on table 2.3 includes within its objectives that students would understand the nature of entrepreneurship and business within the Nigerian environment. This is an integral objective would allow students to be exposed to the nature of the Nigerian institutional environment. This knowledge could provide information on the steps required create new business ventures in a society such as available business support units, access to start up and operational capital when the decision for entrepreneurship is made (Engle et al., 2010). In this case, the modules 'Nigerian entrepreneurial environment' and Creativity and intellectual rights' would give important insights into the context of Nigeria on creating and running a business.

Furthermore, it has been highlighted earlier that role models such as immediate family, peers, bosses, lecturers, and prominent entrepreneurial figures play key roles in the formation of an individual's entrepreneurial intentions (see section 2.2). These category of role models may also play important roles in achieving the objectives the GST entrepreneurship program in Nigeria. The program on table 2.3 show some element of employing role models in delivering the course contents.

Within the specific objectives highlighted, the program is expected to prepare students in utilizing resources and networks to engage in varying opportunities, and to start and manage their businesses at the micro or family level. In an attempt to achieve these program objectives, it involves the program providing access to role models through lecturers, guest speakers through local entrepreneurs, and alumni that could provide hands-on mentoring and advise to students.

These individuals may provide students with the self-confidence in utilizing resources and developing networks through vicarious experiences. Vicarious experiences are regarded as a

mechanism of self-efficacy that allow observing the role model and following suit his or her activities so as students can see themselves as their role models in the future (Zhao et al., 2005). This could be more favorable for students with entrepreneurial parents because their experiences and interactions can aid the students in shaping their business mindset that may likely result to the students to become entrepreneurs in the future (Van Auken et al., 2006).

In addition, the GST program on table 2.3 outlined that the program would develop the attitudes and know-how of students in starting their business. It has been underscored in entrepreneurial research that entrepreneurship education can influence students' attitudes towards entrepreneurship (Souitaris et al., 2007; Fayolle et al., 2013; Saeed et al., 2015). This can be understood from the cognitive perspective (see section 2.3.3 for more details). Krueger et al (2000) stated that individual's personality such as one's locus of control, need for achievement , risk-taking propensity, and need for achievement (see section 2.3) may help explain the attitudes towards entrepreneurship; the perceived desirability for entrepreneurship.

In order to create personal and enterprise development in students, it is necessary to introduce them to the unique characteristics of an entrepreneur (Jones and English, 2004). In this case, it is clear that the GST entrepreneurship course in Nigeria need to be exposed to the unique features of the entrepreneur in parallel to other entrepreneurships concepts so as to fully develop their perceived desirability for entrepreneurship.

Within the course contents of the GST program on table 2.3, the module that may introduce the characteristics of an entrepreneur to students seemed omitted from the program. This is an essential module that may help in providing the general understanding of entrepreneurship and the formation of positive attitudes towards entrepreneurship. This gap could lessen the extent to which a program could make the required impact on students' entrepreneurial intentions.

2.6 Boundaries of The Research

As previously discussed in Chapter 1 of this thesis, the focus of this research is to examine entrepreneurship education programs within Nigerian Universities, and to identify and validate the factors that might influence students' intention to pursue entrepreneurship as an entrepreneurial behavior. Also, the conceptual framework would focus on the antecedents that might have a relationship with forming entrepreneurial intentions not the intention-behavior link. There are two clear boundaries that may justify the sample and the conceptual model of this thesis: the chosen sample and the dependent variable - entrepreneurial intentions.

The sample is the first explicit boundary of this research consisting of third year undergraduate students. Krueger et al (2000) and Linan et al (2011) stated that career intention of students during making career decisions might predict subsequent career choices before graduation. This provides the strength for this sample. In addition, Souitaris et al (2007), Zhang et al (2014), and Maresch et al (2016) stated that undergraduate students with science backgrounds develop entrepreneurial intentions after participating in EED programs. More details of justification for the chosen sample has been discussed in the methodology chapter of this thesis (see section 3.2 in chapter 3). initially, this would be followed by the dependent variable entrepreneurial intentions.

Secondly, the next boundary in this research is the dependent variable. Entrepreneurial intention was defined in section as the intention to create a new business venture (Zhao et al., 2005). Nabi et al (2016) pointed out that students might have had the idea of their choices even when the path has not been cleared. This indicates that students possess some exposure and experiences within and outside the University that may have influenced the student to view entrepreneurship as a

viable career alternative within their backgrounds providing a strong justification for including entrepreneurial intention in this research.

Overall, this research is focused on studying the entrepreneurial intentions of a sample of third year University students from science degrees studying in an EED program. The parent literature, research problem area, research boundaries have been discussed that highlights both the theoretical and practical foundations of the research. The research hypothesis in the conceptual framework would be discussed in the next section.

2.7 Conceptual Framework

The predominant problem generated from this research is: *Do entrepreneurship education programs in Nigerian Universities impact on students' entrepreneurial intentions? What factors influence these intentions?* The framework presented in figure 2.3 addresses this research problem specific to the context of undergraduate students in Nigerian Universities.

This section of the thesis provides an outline of the conceptual framework followed by three sections that cover the predictor variables that determine entrepreneurial intentions; the specific hypotheses are then stated. The model constitutes of four main components: (1) the dependent variable (entrepreneurial intentions). (2) Measures of entrepreneurship education (entrepreneurial learning component), (3) measure of attitudes toward self-employment (perceived desirability for entrepreneurship), (4) a perceived belief /capabilities measure (entrepreneurial self-efficacy). The framework also considers that there are variables beyond the control of the researcher that may have an influence on entrepreneurial intentions of students.

The overall proposition of the study is that students may form entrepreneurial intentions when they perceive entrepreneurship to be desirable and feasible after they must have been exposed to entrepreneurship education in their Universities.

2.7.1 Entrepreneurial Intentions

The few number of individuals that possess the psychological traits of the entrepreneur, and knowledge from entrepreneurship education may be likely engaged in entrepreneurship in the future. For these individuals, the intention to be self-employed may be formed by a displacement that could lead them to modify possible future plans (Shapero and Sokol, 1982). It is possible to suggest that participating in the entrepreneurship education programs in Nigerian Universities may be an indication of a displacement for the student especially when some situational conditions prevail in the environment and for the individual such as knowledge of an entrepreneur, parent occupational background, perception of family income, age, gender and course of study. The outcome may be the development of the, individuals' self-employment intentions. In this regard, the overall level of entrepreneurial intentions of students in Nigerian universities may be studied before and after participating in Entrepreneurship education program.

The background variables (parent occupational background, perception of family income, age, gender and course of study) were selected as control variables in this study because of the suitability they have in this study coupled with the support found for them in entrepreneurial intention literature (Kolevereid, 1996; Fayolle et al., 2006; Sanchez et al., 2013; Fayolle and Gailly, 2013; Karimi et al., 2016). In addition, an individual may personally know an entrepreneur within the immediate social environment that may likely influence his or view about self-employment without going through education (Linan et al., 2011).

It has been acknowledged that entrepreneurship education programs influence entrepreneurial intentions (Kolevereid and Moen, 1997; Peterman and Kennedy, 2003; Karimi et al., 2016). Souitaris et al (2007) and, Sanchez (2013) found that there are certain differences between students who have participated in entrepreneurship and who have not. However, it is yet to be seen how these results can be extended to other contexts. The review of Nabi et al (2017) support this claim by indicating that only few studies utilize methodologies that compare students that participate in entrepreneurship programs and students who have not participated. Thus, it can be proposed that Nigerian university students that pass through these programs would also be different in their entrepreneurial intentions after the program. Therefore, the following hypothesis may be developed:

H1: At the end of the program in Nigerian Universities, there would be a difference in students' entrepreneurial career intentions between students that participate in entrepreneurship education students who have not participated in entrepreneurship program.

2.7.2 Entrepreneurship Education

In addition to testing the relationship between perceived desirability for self-employment and entrepreneurial self-efficacy, this research seeks to establish the relationship between entrepreneurship education and the antecedents of entrepreneurial intentions.

Entrepreneurship education that consists of both theoretical and practical activities is the program studied in this research. Mwasalwiba (2010) and Balan and Metcalfe (2012) suggest that entrepreneurship education programs consist of exposure through both theoretical knowledge and a complement of numerous learning by doing activities. The knowledge students

obtain from entrepreneurship education develops the leaning scenario. Johannisson (1991) proposed that entrepreneurship education revolves around five conceptual categories of learning; (1) why entrepreneurs act in a specific way (attitudes, values and motivation) (2) what actions should be taken to start up a new business venture (knowledge), (3) the competence of how to start a business (skills and abilities), (4) the networks needed to be developed (networks and social skills), and (5) the abilities needed to identify opportunities (when to execute an act).

The knowledge obtained within EED through these learning components develops the individuals' human capital that paves way for better opportunity identification skills (Souitaris et al., 2007). It is therefore reasonable to suggest that participating in an entrepreneurship program in Nigerian Universities would enhance students' opportunity-identification ability and thereby influence their entrepreneurial self-efficacy, perceived desirability, and subsequent entrepreneurial intentions.

As it was earlier stated, that there are four key mechanisms that develop self-efficacy (Bandura, 1997); (1) Mastery or personal experiences of the individual, (2) vicarious experiences or modelling, (3) verbal persuasion for feedback, and (4) control of psychological reactions. Zhao et al (2005) stated that participating in entrepreneurship education program provide the source for developing these mechanisms of self-efficacy. The entrepreneurship program studied in this thesis offer these components: (1) in class lectures- a taught aspect of the program by academics, (2) a business planning and writing assignments or exercises that involves market research development, communicating with potential business partners, and controlling the challenges with new venture creation in feasibility studies (3) practical aspects such as interacting with local

entrepreneurs as guest speakers in specific lectures that share their entrepreneurial experiences and offer advice (4) case studies analyzed through class discussion and problem solving.

From the perspective of entrepreneurial intention models (Shapero and Sokol, 1982; Ajzen, 1991), perceived desirability for self-employment and entrepreneurial self-efficacy could be influenced by participation in the stated components of the entrepreneurship education programs delivered in Nigeria supplied as the intervention in this research. Fayolle et al (2013) found that students in entrepreneurship programs increase their attitudes towards self-employment after becoming introduced to entrepreneurship. Karimi et al (2013) also found that perceived behavioral control of students increased at the end of an entrepreneurship program. In this regard, the following hypothesis could be stated:

H2: Nigerian students' participation in Entrepreneurship Education programs in Universities would impact on their perceived desirability for entrepreneurship.

H3: Nigerian students' participation in Entrepreneurship Education program in Universities would impact on their entrepreneurial self-efficacy.

2.7.3 Perceived Desirability of entrepreneurship

Perceived desirability for self-employment may be regarded as an attitudinal judgment that individuals use cognitively to judge whether or not to act on an entrepreneurial behavior (Krueger et al., 2000). According to Shapero's entrepreneurial event model, an individual's perceived desire for self-employment may be positively related to entrepreneurial intention in the future Kolevereid (1996) and Souitaris et al (2007) described the difference between perceived desirability of self-employment and organizationally employed could be regarded as perceived

desirability of self-employment. He highlighted that higher level of perceived desirability of self-employment indicates that the individual may likely favour self-employment than working for someone else. It could be possible that students with a desire for entrepreneurship may embark on self-employment as a viable career alternative upon graduation. Prior studies suggest that individuals' desires may be linked to their motivation that drives the desire for their careers (Cater et al., 2003; Saeed et al., 2014). These authors found that that one of the advantages of becoming self employed is that entrepreneurship provides a means for generating wealth, achieving self-realization, gaining independence, becoming recognized, and play influential roles. Fayolle and Gailly (2013) found that students' attitudes towards entrepreneurship improved in the medium term. It may be reasonable to suggest that participating in entrepreneurship education programs may provide the opportunity for students to obtain higher motivation to consider entrepreneurship as desirable and a viable career option.

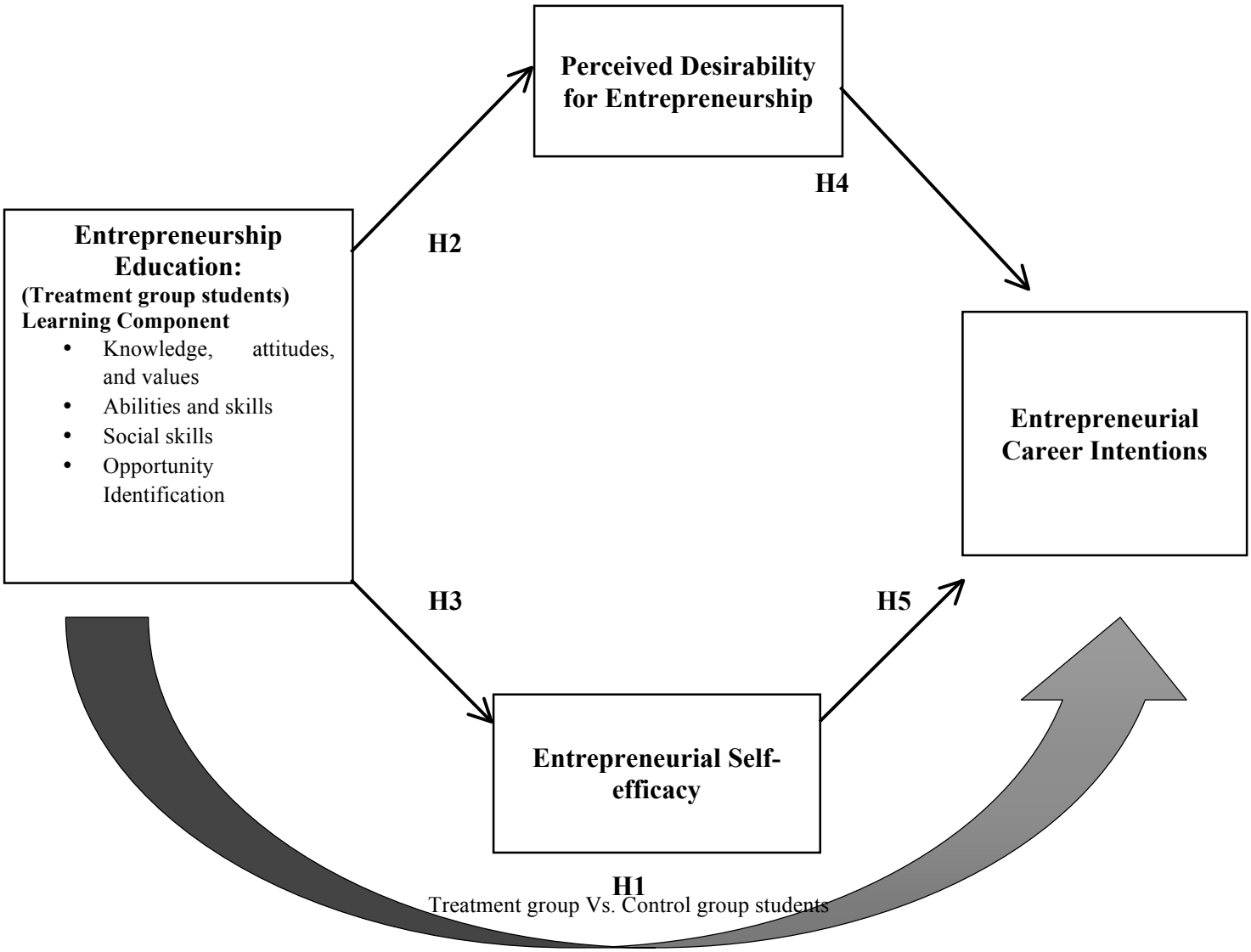
In Nigerian Universities, few studies were conducted regarding students' entrepreneurial intentions. Akanbi et al (2011) Muhammad and Ahmed (2015) found that students who had higher perceived desirability for self-employment developed higher entrepreneurial intentions. John et al (2014) found that students with high entrepreneurial intentions had their personal motive to fulfill. Though the findings in the Nigerian context may be similar to the findings in developed countries (Kolevereid, 1996; Krueger et al., 2000; Mueller, 2011; Saeed et al., 2014), their studies did not consider the condition of perceived desirability and entrepreneurial intentions prior to participating in entrepreneurship education programs, because it will influence their desire for entrepreneurship. In this regard, the following hypotheses may be generated:

H4: Nigerian students' perceived desirability for entrepreneurship would influence their entrepreneurial career intention.

2.7.4 Entrepreneurial self-efficacy

The element entrepreneurial self-efficacy is a perceptual skill that individuals use to decide whether or not to act (Mitchell et al., 2002). Based on the intention models, entrepreneurial self-efficacy is regarded as the measure for perceived feasibility for self-employment in determining entrepreneurial intentions (Krueger et al., 2000; Fayolle et al., 2013). The belief an individual has on performing an entrepreneurial action is based on the knowledge and skills about that entrepreneurial action (Chen et al., 1998). It may be suggested that participating in entrepreneurship education program may increase the entrepreneurial competence and entrepreneurial intention of students (Sanchez, 2013) in order to view self-employment as a viable career. Studies have proven that there is appositive relationship between entrepreneurial self-efficacy and entrepreneurial career intentions (Boyd and Vozikis, 1994; Chen et al., 1998; Zhao et al., 2005; Piperopoulos and Dimov, 2014; Fayolle and Gailly, 2013; Karimi et al., 2016). Chen et al (1998) found that entrepreneurs were different in their entrepreneurial self-efficacy in the areas of innovation, marketing, management, risk-taking, and financial control compared to business managers. Piperopoulos and Dimov (2014) and Karimi et al (2016) found a positive relationship between students' entrepreneurial self-efficacy and entrepreneurial intentions. This relationship is once again tested in this research in order to generalize its applicability to other contexts. Therefore, the following hypothesis is generated:

H5: Nigerian students' perception of entrepreneurial self-efficacy would influence their entrepreneurial career intentions.



Source: Synthesis of the Literature Review

Figure 2.2 Conceptual Framework for Entrepreneurial Intentions

This study examines the impact of entrepreneurship education programs on entrepreneurial attitudes and intentions of students in Nigerian Universities. The key proposition developed within the conceptual framework of the study is that entrepreneurial intentions of Nigerian students may be formed upon perceiving that embarking on entrepreneurship career to be desirable and feasible after participating in entrepreneurship education in their Universities, and there are certain factors that influence the formation of the entrepreneurial intentions in the students.

In this regard, Hypothesis 1 is related to the difference between the treatment group and the control group in relation to the variation in their overall entrepreneurial intentions for phase 1 and phase 2 measurements. Hypotheses 2 and 3 are related to Nigerian universities' entrepreneurship education and their relationship with perceived desirability for entrepreneurship; and the entrepreneurial self-efficacy of students. Hypotheses 4 and 5 are concerned with the relationship between perceived desirability of entrepreneurship with entrepreneurial career intentions of Nigerian University students; and perception of entrepreneurial self-efficacy and entrepreneurial career intentions. Nigerian University students.

CHAPTER 3 RESEARCH METHOD

Introduction

This chapter is concerned with the research methodology employed to achieve the research aim and objectives of this study. It provides an overview of the research design used with justification of the research strategy. This is followed by discussion of research participants and instrumentation of the study. Data collection procedures and analysis were outlined. This is followed by the presentation of the preliminary analyses. Then issues regarding validity and reliability of the data were discussed with ethical procedures and limitations of the methodology.

3.1 Research design: Quantitative Research

The use of quantitative research has been established in social science and entrepreneurship education research (Sanchez, 2013; Karimi et al., 2016). According to Guba and Lincoln (1994, p.110) "inquiry takes place as through a one-way mirror". The author informed that any forms of bias or personal views could be avoided in order to arrive at an objective outcome while the stated process of the research is carefully followed. This procedure can ensure that results could be replicated in various contexts (Bryman and Bell, 2014; Karimi et al., 2016). In this sense, the formulations of hypothesis are made clearer. This allows the objective views of the researcher to be highlighted. Thus, quantitative research strategy makes use of the objective method to investigate a research problem (Collins and Hussey, 2011). This study uses a quantitative method of research to conduct the empirical test.

Quantitative method in research entails a positivistic philosophy that investigates a specific phenomenon through statistical techniques (Bryman and Bell, 2014; Creswell, 2014). This method breaks the phenomenon into quantifiable units in order to develop or test hypothesis. The most important observation from this method is the ability to breakdown an instrument such as the questionnaire and interprets it into numbers for analyses. A few sets of drawbacks of this method may exist such as, the inadequacy of the method to understand human behavior within an analysis as in qualitative methods, the lack of controlling a variable, and the generalization of the results might not be similar in all contexts (Collins and Hussey, 2011). However, quantitative methods can bring about reliability, accuracy, and generalizable findings. It can also aid the use of advanced statistical tools in analyzing data.

In entrepreneurship education research, the needs for the use of multidisciplinary theories have also been encouraged in order to evolve the field (Zahra, 2007). In the development of the conceptual framework of this study, Ajzen's (1991) theory of planned behavior has been borrowed from the psychology field to complement other theories in entrepreneurship research in explaining entrepreneurial intentions. This has been tested and supported empirically by prior research (Krueger and Brazeal, 1994; Krueger et al., 2000; Fayolle et al., 2006; Souitaris et al., 2007; Sanchez et al., 2013; Karimi et al., 2016).

Therefore, in order to investigate the entrepreneurship education program, examine its impact, and identify those factors that have influences on students' entrepreneurial intentions in Nigerian Universities, the research methods need to involve quantitative instruments (to measure the effect of the entrepreneurship program and measure influencing factors).

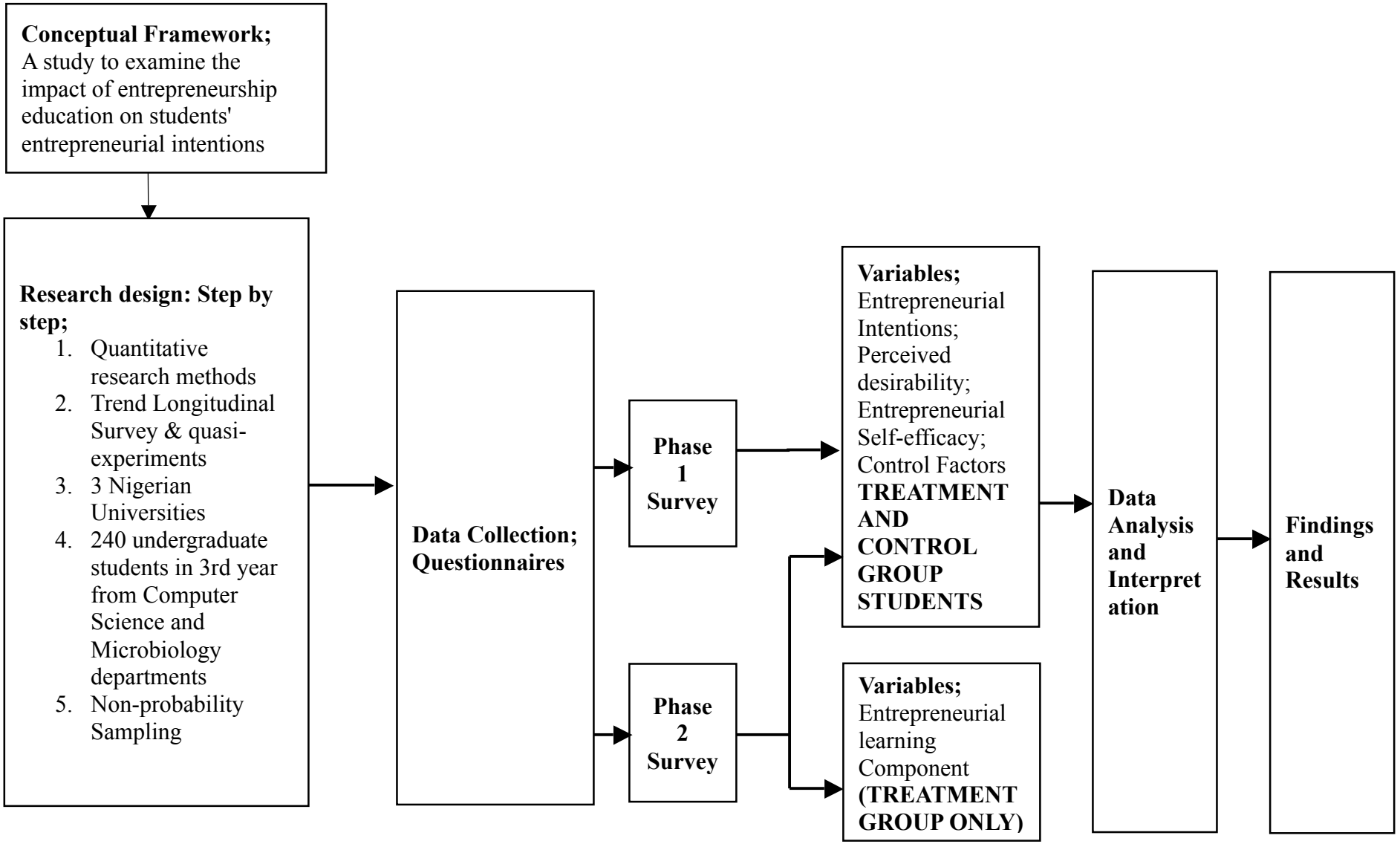


Figure 3.1 Schematic Diagram for Research Methodology

Quantitative Method Research Strategy

In implementing the quantitative method procedure, this study ensures that phase 1 survey data is collected to measure the level of students' entrepreneurial intentions during the early period of the entrepreneurship education program. This is followed by a phase 2 data collection at the final stage of the program. This uses quantitative data to explain and interpret the overall impact of entrepreneurship education and entrepreneurial intentions.

3.2 Research Participants

According to Malebana (2014), a sample should be chosen for a specific purpose. The entrepreneurship education program examined in this study is a compulsory program offered to third year students in all Nigerian Universities, there are currently 140 Universities in the country. It includes 42 federal Universities, 45 state Universities, and 51 private Universities (National Universities Commission, 2016). This is not possible to study all the Universities. In addition, the present political and security conditions in the country especially in the north and southeast will hinder the researcher from selecting sample Universities from the six geopolitical zones in Nigeria using a stratified approach (Bryman and Bell, 2014). Finally, the untimely and popular union actions by academic staff of public universities in the country will affect the research (Ajayi, 2014).

Bearing in mind the above contextual scenarios and the purpose of this study, a purposive approach was used to select the quantitative sample from a population of third year science students in three private Universities in the southwestern region of Nigeria. These students are

individuals facing career decisions at the senior years of their degree, and are considered within an entrepreneurial age group (Linan et al., 2011; Fayolle and Gailly, 2013; Karimi et al., 2016). Purposive sampling is used when individuals are selected to examine an underlying problem in a research study, in this study the impact of entrepreneurship education in Nigerian Universities (Plano-Clark and Creswell, 2010; Creswell, 2014). Furthermore, this method of sample is usually employed in conducting evaluations (Krathwohl, 2009). Although, scholars have claimed that probability sampling may be the most preferred method for quantitative studies (Bryman and Bell,2014; Creswell, 2014). It is suggested that non-probability sampling limit the ability of a study to make generalizations to the population. However, Cheng et al (2009) and Fatoki (2014) argued that purposive sampling could be useful in entrepreneurship education research when obtaining particular information from undergraduate students. This claim fits the purpose of this research because the entrepreneurship education program examined in this study is specific and the information required about its impact is also specific. Therefore, a purposive non-probability sampling has been utilized in this study.

Overview of The Quantitative Study

The hypotheses were tested using a trend longitudinal survey with quasi-experimental studies in a pre-test post-test non-equivalent control group design with third year undergraduate students in two groups. The purpose of the survey in this research is to obtain comparable data from the chosen sample in order to find similarities and differences on measured variables (Sanchez, 2013). Using a trend longitudinal survey allows the study of variables overtime in contrast to only change in time as used in cohort longitudinal survey (Bryman and Bell, 2014). It also allows surveys to be conducted on varying samples from the same population that may change and are tested at different times (Chandler and Lyon, 2001).

Therefore, the groups include a treatment and a control group surveyed during the 2015/2016 academic sessions to measure the variables specified in the conceptual framework before and after participating in EED at phase 1 and phase 2 (namely: perceived desirability, entrepreneurial self-efficacy, entrepreneurial intentions, and entrepreneurship education). The phase 1 survey was conducted to obtain pre-existing difference between the treatment and control group to address the issues with internal validity associated with quasi-experiments (Creswell, 2014), while a phase 2 survey was conducted to obtain the difference between the two groups that may occur as a result of the intervention (exposure of the treatment group students to EED). It should be noted that entrepreneurship education variable was measured at phase 2 for only the treatment group as a learning indicator.

For the treatment group, research participants were third year science undergraduate students participating in a compulsory general studies (GST) entrepreneurship program from two Universities. Two universities were considered as one treatment group because: (1) the program investigated is the same prototype curriculum that is provided nationally to all senior students in Nigerian Public and Private Universities, (2) they are both Private Universities with close geographical proximity and, (3) the Universities could be regarded as homogenous due to their similar intake criteria regulated by the Nigerian government through the Joint Admission and Matriculation Board (JAMB), the agency that handle examinations for admissions into all Nigerian Universities both public or private (JAMB, 2017).

The entrepreneurship program was conducted in two hours a week for two semesters between October 2015 and June 2016.The entrepreneurship curriculum schedule has been provided in **section 2.4.5** in Chapter 2 of this thesis.

Meanwhile, for the control group, research participants also were third year science undergraduate students not participating in the compulsory general studies (GST) entrepreneurship program from another University. The inclusion of participants from a third University provided a suitable control group in order to compare the effect of the experiment (entrepreneurship education) as a result of the homogeneity of the group with the treatment group.

The criteria for homogeneity of the groups in this study are; (1) The general studies entrepreneurship program is offered at the fourth year of students' degree (Oosterbeek et al., 2010). This allows the third year students to focus exclusively on their course disciplines, and (2) it is also a private University in a close geographical proximity with the treatment group.

Identifying the closely suitable control group was challenging for the researcher due to the compulsory nature of the curriculum offered in all Nigerian Universities. However, the inclusion of this control group is not expected to affect the internal validity of the results and would therefore not hinder the importance of the experiment (Fayolle and Gailly, 2013).

Table 3.1 below shows the category of the treatment and control group that shows participation in entrepreneurship education.

Table 3.1Category of the treatment and Control group with Entrepreneurship Education

Category	Treatment Group	Control Group
Computer Science courses	★	★
Microbiology courses	★	★
GST Entrepreneurship	★	

The entrepreneurship program introduced students to the concept of entrepreneurship and the process of generating business ideas to execution.

The samples in this study emanate from science degrees specifically from computer science and microbiology students. Only these two departments from the science faculty were made available by the administration to collect data. The more delay encountered in phase1 survey, the more the subjects would be exposed to the treatment, thereby increasing threats to internal validity.

It is also likely that any of these science students might consider creating one's own business venture through self-employment as a viable career option within their scientific background (Souitaris et al., 2007).

Two decades ago, it has been suggested that using students' sample in behavioral research were in appropriate (Robinson et al., 1991). Lately, scholars in entrepreneurial intention and behavioral research have legitimized their use because students were considered to be in the stage of deciding their career options (Krueger et al., 2000; Von Graevenitz et al., 2010; Linan et al., 2011; Vanevenhoven and Ligouri, 2013). This has created the best possible justification for

the use of students' sample in this study. In addition, it is also possible that some of these students may have longer-term goals and may not perceive to have an immediate intention for entrepreneurship (Fayolle and Gailly, 2013).

3.3 Instruments and Measurements

This section outlines the instruments and measures used in this study. The survey questionnaires developed for this study used validated scales adopted from previous literature in entrepreneurship. This is discussed in each constructs section. All the scales were tested for internal validity using SPSS 22.0. A test for internal consistency was conducted with Cronbach Alpha measures on all scales to ensure overall scale reliability. Finally, the original authors' scales were also outlined. Below are the instruments utilized with their measures.

3.3.1 Entrepreneurial Intentions

For the purpose of this study, entrepreneurial career intention may be referred to as the intention to choose self-employment as a career option (Krueger et al., 2000). A three-item measure of entrepreneurial career intention was adopted from Sanchez (2013), which was originally developed by Kolevereid (1996), and validated by Souitaris et al (2007). The measure captures an individual's intention to start their own new business ventures as a career compared to working for someone else in organizations. The scale was measured on a five point likert scale stating; (a) If you were to choose between running your own business and being employed by someone, what would you prefer? (1 =Would prefer to be employed by someone to 5 =Would prefer to be self-employed), (b) How likely is it that you will pursue a career as self-employed? (1 = unlikely to 5 =likely), (c) How likely is it that you will pursue a career as an employee in an

organization? (1 = unlikely to 5 =likely). Item C was reverse coded. An index of entrepreneurial career intention was developed by averaging the three items score (Souitaris et al., 2007). The complete item measures are shown on appendix 1. The data confirmed the reliability of the scale Cronbach Alpha (phase 1=0.94 and phase 2= .903). It should be noted that the point '3' in the Likert scale will be omitted from the analysis as it indicates a neutral option of "undecided" (Sturgis et al., 2014).

3.3.2 Perceived Desirability for Entrepreneurship

This study adopted a measure of perceived desirability proposed by carter et al (2003), which include a list of seventeen reasons provided in favor of self-employment career. These reflected respondents' attitudes for self-employment (Saeed et al., 2014) such as self-realization (four items), financial success (three items), role (three items), innovation (two items), recognition (three items), and independence (two items). An example of statements from each attitude include; self realization- "to challenge myself "and "to fulfill a personal vision"; financial success- "To earn a larger personal income" and "To give my self and family financial security"; role- "To build a business my children can inherit" and "To continue a family tradition"; innovation- "To be innovative at the forefront of technology" and "To develop an idea for a product"; recognition- "To gain a higher position for myself" and "To be respected by my friends"; independence- "To get greater flexibility for personal life" and "To be free to adapt my approach to work". The complete item measures are shown on appendix 1.The items were measured on a five point likert scale ranging from (1) = no extent, and (5) a very great extent. The items developed a reliable scale at Cronbach Alpha (phase 1= 0.927 and phase 2= .841). For this instrument, it is also acknowledged here that the point '3' in the Likert scale will be omitted from the analysis as it indicates a neutral option of "undecided" (Sturgis et al., 2014).

3.3.3 Entrepreneurial Self-Efficacy

Entrepreneurial self-efficacy is regarded as an individual's perceived level of own capabilities (Chen et al., 1998; Zhao et al., 2005). This study adopted a twenty-two items measure of entrepreneurial self-efficacy from Chen et al (1998). The scale addressed the how confident respondents would be in carrying out different roles and task associated with five areas of entrepreneurship. The areas include marketing, innovation, management, risk-taking, and financial control. Example of efficacy in each area include items such as: marketing- "Set and meet market share goals" and "Conduct market analysis"; innovation- "" and "New products and services" and "New methods of production, marketing and management": management- "Manage time by setting goals" and "Establish and achieve goals and objectives", risk-taking- "Make decisions under uncertainty and risk" and "Take responsibility for ideas and decisions", and financial control – "Perform financial analysis" and "Control cost". The items were rated on a five-point likert scale ranging from 1= no confidence to 5= complete confidence. The full twenty-two item measures are shown on appendix1. In consistent with Chen et al (1998), Forbes (2005), and Sanchez (2013), a total entrepreneurial self-efficacy score for each respondent was obtained by averaging all of the twenty-two items in the scale. The scale reliability for entrepreneurial self-efficacy is measured at Cronbach alpha (phase 1= 0.949 and phase 2= 0.924). For entrepreneurial self-efficacy, the point '3' in the Likert scale will be excluded from the analysis as it indicates a neutral option of "undecided" similar to the other instruments (Sturgis et al., 2014).

3.3.4 Entrepreneurship Education

In this study, entrepreneurship education refers to education that provide students with the knowledge and skills to develop positive attitudes towards creating their own new business

ventures and view self-employment as a viable career (Mwasalwiba, 2010; Fayolle and Gailly, 2015). Based on the conceptual classification of entrepreneurial learning indicators on five levels Johanisson (1991), this study adopts Souitaris et al (2007) measure of conceptual learning from entrepreneurship education program. The author developed the scale based on the notion that an entrepreneurial act may be better predicted by one's perception of the environment than actual facts (Zahra, 1993). Respondents were asked phase 2 (after participating in general studies entrepreneurship program) in five-items on a 5 point likert scale 1= not at all to 5= to a very great extent. To what extent did the entrepreneurship program create their: (1) understanding of the attitudes, values, motivations of an entrepreneur (why do entrepreneurs act); (2) understanding of the action one needs to take in order to start a business (what needs to be done); (3) understanding of the practical management abilities and skills in order to start a new venture (how does one starts a business); (4) abilities to create networks (who do you need to need to know); (5) ability to identify an opportunity (when to act). Johanisson (1991) described the five level items respectively as a resonate of know why, know what, know how, know who, and know when. He added that the measures would provide the opportunity to comprehend the level at which the learning outcomes of the entrepreneurship program have been achieved in addition to their perception of knowledge and skills on entrepreneurship. The measure developed a reliable scale as Cronbach alpha (phase 2= 0.876). For the purpose of analysis, the point '3' in the Likert scale will be omitted from the analysis as it indicates a neutral option of "undecided" (Sturgis et al., 2014).

3.3.5 Control Variables

The following control variables considered for analysis in this study include; Age, gender, course of study, Personal knowledge of an entrepreneur, parental occupational status; whether parents

were working for someone else or self employed, or retired, and family income level. They were selected because they were found to be supported in entrepreneurship literature (Souitaris et al., 2007; Sanchez, 2013). The continuous variables were regarded as categorical variables that would use dummy variables. For example, Age (1=19 years to 25years, 2=26 years to 32years, 3= 33 years to 39 years, 4=39 years and above) and family income level (1= $120-$333, 2= $340-$1000, 3= $1006- $1666, 4= $1673- $2333, 5= $2340 and above). However, from 1-32years of age of the respondents were regarded as 1 while 33 and above years were regarded as 0. The family income of the respondent were measured by indicating $120-$1666 were regarded as 1 while $1673 and above were regarded as 0. The other four were categorical variables with their codes were also indicated as; Gender (male=0, female=1), course of study (computer science=1,Microbiology=0), personal knowledge of an entrepreneur (Yes=1, No=0), and parents' occupational status (working in private firms, working in the public sector, self-employment, retired, unemployed). However, those working in private firms, self-employed, unemployed were regarded as 1 while those working in public sector and retired were regarded as 0.

The data on respondents' family income level was obtained based on Nigeria's currency, which is familiar to students. However, for statistical purpose, the value of family income was converted to the United States dollar as it is an acceptable global currency (**see table 4.6 in Chapter 4 of this thesis)**. It is important to mention that the currency exchange rate prevailing as at the period of data collection was used for conversion.

3.4 Data collection Procedures

The researcher planned out the data collection procedure that included a quantitative pilot survey in Nigeria. The main quantitative data collection for phase1 survey and phase 2 surveys followed sequentially in Nigeria. See appendix for the full questionnaires used in this study.

3.4.1 Pilot Data

For the pilot data, two questionnaires (representing phase 1 survey and phase 2 survey) were pre-tested to ensure that the questions were also clarified and it would address the research aim and objectives of the study. This procedure enhances construct validity of the questionnaires (Saunders et al., 2012). The questionnaires consisted of a 3 and 4 sheet A4 paper respectively. Third year students from the treatment group Universities were the target group. These sets of students would not participate in the main survey as they would progress to their 4^{th} year in the new academic session (period targeted for main data collection). Reaching the students was a struggle for the researcher because the Universities were on holiday, however, 30 students were successfully targeted during a voluntary summer program, though only 14 questionnaires were filled. The participants were ensured of their privacy and confidentiality before, during, and after the test.

Both questionnaires purposely asked participants to identify or explain any unclear question (s) on a three-line space provided. The respondents mentioned that some of the questions were not vividly stated. For example, “perceived desirability” or “entrepreneurial-self-efficacy”, were not clear, even though all items within these sections were ticked.

To avoid future occurrences from the students' perspectives, the researcher replaced these terminologies that could be understood easily at the students' level such that "personal ambition" relates to "perceived desirability", while "entrepreneurship self confidence" relates to "entrepreneurial-self-efficacy". However, these terminologies were used only for fieldwork purpose in this study. Since the key rationale of pilot data is clarity of questions than statistical inferences, it was acceptable to acknowledge the mentioned observations.

In order to check participants' compliance with providing personal details for statistical purposes in matching pattern, participants were asked to write their dates of birth on the questionnaires (Mueller, et al., 2011). The respondents were reluctant with this detail. This was important for the researcher to have an idea of students' compliance with these related questions to avoid such errors during main data collection. It indicates that participants for the main data collection may also likely refrain from such questions.

Hence, the researcher developed an alternative method to create matching patterns for the upcoming surveys such as their identification number and contact details with the approval of the administrators on students' identification number. The filled questionnaires were sealed in a confidential envelop with no third party access.

3.4.2 Survey Procedure

The entrepreneurship lecturers, course content, teaching methods were the same according to the curriculum across the two waves of survey (phase 1 and 2 survey). The researcher collected the data during students' core science modules in the second week of the first semester and the tenth week of the second semester (a week before revision week) within one academic calendar. See

appendix 1and 2 for the copies of the survey briefs read to the class prior to students completing the questionnaires. Ethical procedures were followed and clearance obtained from the University administration. This can also be found in appendix 3 of this thesis. The surveys were conducted with the ethical and professional guidance. Students were made aware that participating in the surveys were entirely voluntary, confidential, and would be made anonymous.

The administration allowed thirty minutes for the data collection as the period was meant for the core modules, which was the best time to capture a good number of students. This increased the response rate of the survey as the students were allocated with a particular task that was timed to fill the survey right before commencing their scheduled module. In that way, the researcher allocated the first five minutes for introduction and instructions and the rest of the twenty-five minutes for completing the surveys. To ensure social desirability, the participants were asked to provide their honest answers in the two surveys (Chen et al., 1998).

For identification pattern, collecting students' identification number as a matching strategy was not successful due to disapproval by the administrators. In this case, participants were notified to provide their contact details within the specified space in the time 1 and time 2 questionnaires. Therefore, the researcher deemed that the contact details for volunteered participants would deem fit for this study. This was because during the pilot survey, participants were asked to provide their dates of birth as a means of identification, but majority of the participants' failed their true complete date of birth mentioning that it was either personal or confidential to them. In order to avoid repeating these occurrences during main data collection, the researcher had opt for other alternatives of identification such as contact details.

Due to the limited time permitted for both surveys to be conducted, there were quite a large number of students that failed to provide their contact details, some only provided their email address in either survey, while some provided only their mobile numbers. This was considered when selecting the appropriate statistical techniques used in this study. Also, the dependent and independent variables in this study would be tested on the overall group level rather than individual students' level.

Phase 1 and 2 Survey Procedure

During the commencement of the phase 1 and 2 surveys, the researcher ensured that all the required ethical steps were taken before, during, and after the survey. These procedures have been discussed in much detail in **section 3.8 of this chapter** and in appendix 1and 2. The participants agreed to take part in the survey voluntarily and they can withdraw at any point from the survey. They were also ensured of their confidentiality, their responses would not be traceable by any third party, and the questionnaires would be destroyed upon completing the analyses of the data. It was also communicated and ensured to the participants that the outcome of their participation and responses would not trigger any issue that may arise from their academic performances. Similar procedure was also followed when phase 2 survey was conducted.

3.5 Analysis of Data

Data analysis procedures discuss the statistical analysis of the time 1 and time 2 surveys with statistical package for social sciences SPSS 22.0. Descriptive statistics of the sample and instruments used in this study was undertaken to compare all the mean scores of the variables

between the treatment and control group. Reliability, and normality tests were undertaken. Validity of the data was also checked. A comprehensive discussion on these preliminary data analyses were provided in **section 4.2 in chapter 4 of this thesis** in order to have a full view of the findings of this study. Statistical analyses in order to test the hypotheses were carried out. The choice of the statistical analyses is based on previous literature in entrepreneurship articles conducted in comparable scenarios reputable journals (Chen et al., 1998; Souitaris et al., 2007; Sanchez, 2013; Karimi et al., 2016). Below is an over overview of the statistical procedures that could ensure a food statistical conclusion validity of the results of this study. This provides in details, the statistical procedures that were used to arrive at the results in Chapter 4.

Overview of Statistical Procedures

In order to improve the statistical conclusion validity of the findings, the data were initially examined to ensure assumptions were not violated in regards to multivariate normality, linearity, and homoscedasticity of the data (Pallant, 2010). This examination would allow the use of parametric statistical tests to be employed for this research, for example independent sample Pearson's correlations test, independent sample t-test, and multiple regressions.

Therefore, statistical procedures were performed to examine linearity through correlation analysis and straight line that shows the relationship between the independent variables with the predicted dependent variable scores. Residuals were also examined through scatter plots to determine the normal distribution of the residuals in regards to dependent variable scores. In addition, homoscedasticity was measured through variance of the residuals in terms of the predicted variable scores to check their similarity across all the predicted scores. Multicolinearity between the variables was checked in order to meet the assumption for multiple regression

analysis. According to (Pallant, 2010), the rule of thumb for tolerance value should be < 1, and VIF value <10. Outliers were checked through scatter plots and the mahalanobis distance scores in the multiple regression outputs. All the scores in the tests confirm that assumptions of multicolinearity were not violated.

Below are the hypotheses formulated based on the conceptual framework developed in the literature review of this thesis. Initially, correlational analysis would be carried out to determine relationships between the variables across the two periods:

H1: At the end of the program in Nigerian Universities, there would be a difference in students' entrepreneurial career intentions between students that participate in entrepreneurship education students who have not participated in entrepreneurship program.

In testing hypothesis 1, an independent sample t-test would be performed to test the statistical significant differences in the entrepreneurial intentions between the treatment group students and control group students. This would reveal whether or not the hypothesis would be rejected.

H2: Nigerian students' participation in Entrepreneurship Education programs in Universities would impact on their perceived desirability for entrepreneurship.

H3: Nigerian students' participation in Entrepreneurship Education program in Universities would impact on their entrepreneurial self-efficacy.

The focuses of these hypotheses are on students that participated in entrepreneurship education in this study (treatment group only). The correlation of the variables (entrepreneurship education: independent variable) and (perceived desirability for entrepreneurship and entrepreneurial self-efficacy: dependent variable) would be checked. This is followed by checking the value of the means score in its improvement in phase 2 compared to phase 1 through the t-test. In addition, an effect size test would be performed to test the magnitude of the difference in the means scores of perceived desirability for entrepreneurship and entrepreneurial self-efficacy. This would show the value of the variance in each variable that can be explained by the exposure to entrepreneurship education (independent variable).

H4: Nigerian students' perceived desirability for entrepreneurship would influence their entrepreneurial career intention.

H5: Nigerian students' perception of entrepreneurial self-efficacy would influence their entrepreneurial career intentions.

Hypotheses 4 and 5 would utilize a correlation analyses, followed by a multiple regression analyses in order to predict the influence of each independent variable (perceived desirability for entrepreneurship and entrepreneurial self-efficacy) on the dependent variable (entrepreneurial intentions) at phase 1 and 2 measurements. The result obtained from the regression model based on the value of the adjusted R^2 would allow the avenue to introduce the control variables measured in this study. This procedure would reveal the unique contribution made by each control variable and the independent variables on the dependent variable at the two phases of measurements.

3.6 Descriptive Analyses

This section discusses the preliminary analyses that involve mainly descriptive statistics and reliability tests. More specifically, details on data preparation and the demographic information of the participants in this study are discussed. This is followed by presenting the reliability tests and descriptive statistics of the key variables measured in this study (namely: entrepreneurial intentions, perceived desirability, entrepreneurial self-efficacy, and entrepreneurship education).

Data Preparation

This sub-section discusses data preparation through data screening, response rate, and missing data in order to provide quality in the data for subsequent analyses.

Data Screening

The dataset was screened by reverse coding negatively worded items. The dataset was also validated through defined rules and straightforward checks with descriptive statistics and frequencies distribution. This was conducted to detect wrongly coded responses in single variables (Pallant, 2010).

Response Rate

For the purpose of this study, 240 questionnaires were distributed to 240 students. This was split between the two groups with 120 of the students (i.e. 50% of the total sample size) in treatment group, the other 120 students (representing 50% of the sample size) in the control group.

For the treatment group, 104 questionnaires were returned, out of which 16 (representing 15% of the returned questionnaires) were found to be either incomplete or blank, hence invalid. The

remaining questionnaire represents 85% of the administered questionnaire as valid response rate for the treatment group.

For the control group, 102 questionnaires were returned, out of which 12 questionnaires (representing 12% of the returned questionnaires) were also considered invalid and therefore discarded. Therefore, 88% of the returned questionnaires for this group were established to be valid. In regards to the overall response rate across the whole sample, the average response rate of the treatment and control groups combined derived an overall 87% response rate.

This increase in the rate was mainly due to how the survey was conducted. The participants were captured during one of their science core modules in order to locate larger turnout of the students for the survey, and to avoid their low turnout during entrepreneurship modules. While the entrepreneurship program is offered to all students from multi disciplines in the third year group, in the science faculties, computer science department followed by microbiology department attract larger admission rates than other courses.

Having considered that 16 questionnaires from the treatment group and 12 questionnaires from the control group were discarded, the basis for this was that the questionnaires were either completely blank or a participant only filled roughly about 3% of the questionnaire. These questionnaires would not provide meaningful data for subsequent analysis, thereby justifying the incompleteness of the discarded data.

Missing Data

The data collected from the two groups (treatment group and control group) were checked through data screening. For the treatment group at phase 1, 88 questionnaires were used for

subsequent data analyses. Missing values were checked based on Little's MCAR test, which reveals that the missing data was randomly distributed (for phase 1; Chi square 765.286 df= 706 Sig. = 0.060; and for phase 2; Chi square= 463.475, df= 421, Sig.= 0.075). Additional test for control group (at phase 1, Chi square= 348.919, df= 332, Sig= .251; phase 2; Chi-square= 562.227, df= 546, Sig= .306). The missing values were estimated by expectation maximization (EM) algorithm (Ruud, 1991) as the percentages of the missing values are not more than 10% of the data. On this ground, imputation method was applied to substitute the missing data. This method is preferable when data is missing at random (Kline, 2015).

3.7 Validity and Reliability

In quantitative research, validity and reliability of the data and results offer defensibility and credibility. Reliability could be regarded as the how consistent is the measurement of a construct, and validity refers to the level of integrity of the conclusions arrived in a research (Bryman and Bell, 2011; Saunders et al., 2012; Creswell, 2014). Validity may be external or internal. External validity refers to the extent of the generalizability of the results to different contexts or settings, while internal validity discuses the establishment of causal conclusions arrived in a study (Saunders et al., 2012). The issues regarding internal validity in this research is discussed in detail section 3.7.1 below.

The strength of the premise in this research has been considered. The sample size, bias in data collection, follow-up data (phase 2 survey), insufficient research procedures, are not an issue in regards to the validity of the quantitative research in this study (Creswell, 2014). The focus of this study is students' entrepreneurial intentions that are measured quantitatively at two waves of

data collection, to obtain a clearer picture of the impact of entrepreneurship education in Nigerian Universities (Karimi et al., 2016). In addition, the purposive nature of the sample selection identified is not regarded as random selection, therefore, generalizability of the results may be limited to the intended population (see also section 3.3 of this thesis) (Bryman and Bell, 2014).

Considering the issues raised on the validity and reliability of the research, it is most important to highlight that the research is conducted in a consistent manner that is defensible and credible. In this way, the researcher provides research stakeholders with much detail on the research procedures and justifications in order to provide a good validity and reliability of the study. For example, the statistical steps in the research design, that are acceptable in entrepreneurship education research regarding study participants in quasi-experimental design with control groups, the use of validated scales, careful data collection procedures, and statistical techniques and analyses would ensure a valid and reliable study (Rideout and Gray, 2013; Karimi et al., 2016; Nabi et al., 2017).

3.7.1 Issues in Quasi-experiment designs

A non-equivalent quasi experiment was the chosen method in the quantitative study of this research to examine the impact of entrepreneurship education on students' entrepreneurial intentions of students in Nigerian Universities. Quasi-experiment allows the researcher develop causal relationship between variables by manipulating the independent variable (participating in entrepreneurship education) through the use of a control group (Shadish et al., 2002; Creswell, 2014). These forms of quasi-experiments have proven to generate robust results in the field of entrepreneurship and specifically entrepreneurial intentions (Souitaris et al., 2007; Sanchez, 2011,2013). It also allows the experiment to take place in its natural setting, in this case, the

general studies entrepreneurship program (GST program in Nigerian Universities) that is mandatory to be offered as part of the students' degree.

It is necessary to highlight that the use of a control group does not overcome the relevance and power of a true experiment especially when there are difficulties in identifying a control group (Fayolle and Gailly, 2013). However, the utilization of control groups in entrepreneurship education research has been encouraged recently, as it depicts rigor and strength to findings (Rideout and Gray, Nabi et al., 2013). In addition, the contextual situation in regards to the research participants in section 3.2 contributes to this discussion.

Furthermore, the validity of pretest-posttest designs in any quasi-experiments are based on four issues namely; (1) statistical conclusion validity, (2) internal validity, (3) construct validity, (4) external validity. These are discussed further in the next section.

3.7.2 Statistical Conclusion Validity

These relate to the conclusions that can be drawn from the statistical analyses conducted in a study. This is determined by three criteria; (a) covariation (b) temporal precedence (c) that a spurious relationship does not exist.

(a) Covariation: concerned with the relationship between an independent variable and a dependent variable may be attributed to the application of an experiment (entrepreneurship education). The existence of covariation is acknowledged in quasi-experiments by considering the likely occurrence of type one error (Shadish et al., 2002). Statistical conclusion validity in this study addresses covariation because the cause effect

of an experiment is tested to obtain a statistical significance at ($p < 0.05$). It has also been noted recently that the construct entrepreneurial intentions at phase 1 or the level of prior entrepreneurial exposure that are mostly used as controls are to be cautioned (Fayolle and Gailly, 2013).

(b) Temporal precedence: It is concerned with how the variables are prioritized in a study. That is the initial occurrence of the cause before the effect takes place. In this study, it is hypothesized that entrepreneurship education takes place before an effect (behavior) takes place.

(c) Non-existence of a spurious relationship: It highlights that there are numerous confounding factors that would influence the relationship between an independent and a dependent variable. These are key issues that are to be considered in quasi-experiments. In this study, Identifying possible threats to internal validity, using statistical control variables, careful data collection procedures are employed as a means of addressing non-spurious relationships among variables (Shadish et al., 2002 ; Creswell, 2014).

3.7.3 Internal Validity

Quasi-experimental studies are known to have high internal validity when compared to other data collection methods and has been addressed in this study (Cook and Campbell, 1979; Shadish et al., 2002).

These threats are addressed when explaining the existence of causal relationships between independent and dependent variables. They include (a) maturation, (b) history, (c) testing, and (d) instrumentation (Shadish et al., 2002; Creswell, 2014).

Maturation

This threat may occur from the natural changes that take place within the psychological state of an individual between the period of pre-test and post-test. This has been addressed in this study as any maturation effect leading to difference in the treatment group may be identified by a difference in the control group.

History

Participants may change due to occurrences within one's environment other than a change from the treatment. This is again controlled for within this study, as any change in the treatment group due to history effect would lead to a difference in the control group.

Testing

Testing takes place when participants of a study are made aware of the dependent variable by taking part in the phase 1 survey. In this study, both treatment and control groups take part in the surveys therefore, both groups may likely develop testing effect. Also, considering the time lag of a long semester between phase 1 and phase 2 surveys, the survey was not discussed within the modules between the two periods, and the nature of tight schedules for third year students, make testing effect a less problematic issue in this study.

Instrumentation

Using varying instruments for pre-post surveys in quasi experiments can develop instrumentation issues. However, this study addressed this issue by using the same validated scales for measurement at both surveys. Therefore, issue due to instrumentation developed in the treatment group may also be developed in the control group.

3.7.4 Construct Validity

According to Shadish et al (2002), threats to constructs validity include; inadequate explanation of the construct, confounding construct, level of construct, mono-operation bias, treatment-sensitivity, reactive self report changes, reactivity to the experimental situation, experimenter effects, novelty effects, compensatory equalization, compensatory rivalry and treatment diffusion. Two of the mentioned threats; experimental situation reactivity, and experimenter activity have received attention in the literature (Chen et al., 1998; Christensen et al., 2014). They are discussed below:

a) Experimental situation reactivity: This may occur when research participants confound the results of the experiment as a result of their interpretation of any instruction, or cues in the research setting and participants' social desirability bias. In order to minimize these threats, the data collection procedure was conducted by the researcher during participants' scheduled science core modules and they were informed that their participation in the surveys were not in any way associated to their grades for the general studies entrepreneurship, and were asked to provide honest answers to the questions in the surveys. Also, the entrepreneurship lecturers and the science core lecturers (time allocated for scheduled survey) were not present when participants completed the surveys. In this way, the survey questions would be less associated with the particular subject of study. In addition, privacy of the participants was enhanced and peer pressure was reduced during phase 1 and 2 surveys by using spacious seating arrangement in the class setting.

b) Experimenter effects: This relates to the characteristics and expectancies of the researcher such as age, religion, gender, and social behavior that can affect and create bias to the

research participants' responses. In order to address these issues, all of the survey participation was voluntary, lecturers were made absent during surveys, and there was no discussion about the research between phase 1 and 2 survey.

3.7.5 External Validity

External validity describes the extent to which the experiment could be generalized to other settings or individuals. Though, the students sample used in this study are computer and microbiology students in the undergraduate level in three Nigerian Universities that are very likely to face career decisions, the experiment may be applicable to other science students in these Universities. In regards to the treatment (entrepreneurship education program), same curriculum and content structure is provided to students in Universities in Nigeria. In addition, sampling from more than one University offer a good external validity of the findings of this study (Souitaris et al., 2007). On these bases therefore, the results of this study may be generalized to other Universities offering the general studies entrepreneurship program.

3.8 Ethical procedures

It is important for researchers to act in an ethical way when carrying out research. Behaving ethically provides protection of the rights of all individuals taking part in the research process, and also provides a good account of the research during dissemination. An ethical framework may be described around the following ethical principles (Bryman and Bell, 2014):

1. To ensure if harm would be created to the participants in the process
2. To ensure there is an informed consent

3. To ensure if privacy of the participant is made
4. To ensure there is no deception in the research process

There may be overlaps in the above ethical principles however, the 2nd to the 4th principle is applicable to this study, while the 1st principle may be described as harm could be harm to an individual's career progression, self-esteem, or physical harm (Bryman and Bell, 2014).

Each step of this research was carried out following the guidance of Nottingham Trent university ethical Framework. This involved seeking access to research participants, which was approved through emails with the administration of the sample Universities. See appendix 3 of this thesis. The approval was attached with a Nottingham Trent University ethical clearance document. This was filled and approved by the Ethical Chair Committee before fieldwork commenced.

During data collection, both interview and survey participants were informed about the purpose of the research, voluntary participation, privacy, and confidentiality of their data. This was stated on the first page of the questionnaire and verbally explained before providing their data. Permission to record interviews was sorted with the interviewees. During analysis, the quotes of the interviewees were made anonymous. It was ensured that participation in the research voluntary. The researcher is also aware of confidentiality in handling the data based on data protection requirements.

3.9 Methodological Limitations

Methodological limitations associated with the study's reliability and validity has been identified in section 3.7 of this chapter. In addition, other limitations exist in this research and care has been taken in minimizing these limitations.

Measures employed in the surveys are regarded as measures of perceptions (individuals' self-reported measures). Common method bias such as consistency motif and social desirability could be limitation to surveys employing self reported measures. The researcher used some procedural strategies to reduce the possibility of these limitations. For example, the first three demographic information (age, gender, and course of study) were presented as the first three questions in questionnaire, while the other three demographic information were presented in the middle of the questionnaires so as to the reduce a common response pattern in the case of consistent motif.

Also, previous studies in entrepreneurial intention research have used the same validated scales employed in this study as self reported measures (Chen et al., 1998; Souitaris et al., 2007; Sanchez, 2013; Saeed et al., 2014). Social desirability has been highlighted in section 3.7 of this chapter, though the participants were required to provide honest answers to questions. This was complemented by screening through the questionnaires during data cleaning in order to identify invalid responses in the questionnaires.

In addition, there is the possibility of demand effects on survey participants. This was addressed by announcing that the survey was not associated with their continuous assessment grades.

The students' sample comprised of only science students majorly computer science and microbiology. This was due to the non-availability of participants from other faculties as at the beginning of data collection and the limited time approved by the Universities. Future research might aim to target samples from students studying other sciences, technology, engineering, and mathematics degrees (STEM) related degrees. This is because students from science degrees show an inclination for entrepreneurship after participating in entrepreneurship education program (Souitaris et al., 2007; Maresch et al., 2016).

CHAPTER 4 FINDINGS

Introduction

This Chapter presents the results from the quasi experiment discussed in Chapter 3 by testing the hypotheses developed. The demographic information of the study is discussed. The outcome of this preliminary study produced results that the study hoped to achieve at that stage. In this regard, statistical analysis techniques were selected to further reveal the statistical significance of the results in order to test the hypotheses that would address the research objectives and aim of this study**.** The results of each hypothesis (hypotheses 1 to 5) have been guided by the choice of statistical techniques in the tests.

This Chapter is divided into four sections. The next section provides an executive summary of the findings. The second section presents the preliminary analyses. This is followed by providing a link between entrepreneurship education and entrepreneurial intentions. The fourth section discusses the relative success of the existing entrepreneurship education programs in Nigerian Universities.

4.1 Executive Summary

This study examines the impact of entrepreneurship education programs on entrepreneurial attitudes and intentions of students in Nigerian Universities. The key proposition developed within the conceptual framework of the study is that entrepreneurial intentions of Nigerian students may be formed upon perceiving that embarking on entrepreneurship career to be desirable and feasible after participating in entrepreneurship education in their Universities, and there are certain factors that influence the formation of the entrepreneurial intentions in the

students. In this regard, two overarching research questions were addressed: Do entrepreneurship programs enhance students' entrepreneurial intentions and its antecedents in Nigerian Universities? And, which factors are important in influencing entrepreneurial intentions of these students?

A pre-test post-test quasi-experimental control group design was employed in the study. Data were collected prior and after an entrepreneurship education programs in three Universities, from 181 computer science and microbiology students (88 participating in the program and 93 in a control group). The results found showed that:

A. There are positive links between entrepreneurship education and entrepreneurial intentions and its antecedents. Students who have participated in the program (program group) had an increase in their perceived desirability for entrepreneurship, entrepreneurial self-efficacy, and entrepreneurial intentions while students who have not participated in the program (control group) did not. Thus, the program enhanced entrepreneurial intentions and its antecedents.
B. Perceived desirability for entrepreneurship was the most enhanced antecedents among the two for the participating group students. In this case, the impact of the program was most exerted on the element of perceived desirability for entrepreneurship.
C. In terms of the factors that influenced students' entrepreneurial intentions, the two antecedents perceived desirability for entrepreneurship and entrepreneurial self-efficacy were the most significant factors. Among the two, perceived desirability for

entrepreneurship was the most important. Therefore, when forming entrepreneurial intentions, it is important for students to view entrepreneurship as desirable and feasible, But with a higher focus on the desirability as it measures the attitude and attraction towards entrepreneurship in students.

D. Other control factors were not as important as the antecedents of entrepreneurial intentions except for students' course of study. Specifically, students studying computer science had higher entrepreneurial intentions than microbiology students. Therefore, the academic disciplines of students were also important following perceived desirability for entrepreneurship and entrepreneurial self-efficacy when intending to embark on an entrepreneurial career.

At a wider level, the study provides empirical evidence of applying the theory of planned behavior in examining the impact of entrepreneurship education on entrepreneurial intentions, and the literature on entrepreneurial intentions by revealing the most important factors that influence students' entrepreneurial intentions.

4.2 Demographic Information

Demographic information provides details of the characteristics of the sample used in the study. In this study, demographic data was collected for the two waves of the survey indicated by phase 1 and phase 2 for the treatment and control groups. This included age, gender, course of study, entrepreneurial knowledge, parents' occupational status, and family income level. The demographic information of the participants in the surveys would provide a direction into further analyses of their entrepreneurial intentions at phase 1 and 2, perceived desirability at phase 1 and

2, entrepreneurial self efficacy at phase 1 and 2, and participation in entrepreneurship education at phase 2.

Age

Table 4.1Analysis of respondents' age bracket for both treatment and control groups

	Phase 1 (T1)		*Phase 2 (T2)*	
Age	*Treatment*	*Control*	*Treatment*	*Control*
19-25 years	93%	98%	94%	97%
26-32 years	5%	2%	6%	3%
33-39 years	2%	-	-	-
39 and above	-	-	-	-

Source: Survey results, 2016.

Table 4.1 above shows the respondents' age distribution in the sample. For phase 1, the respondents in the treatment group comprises of students aged between 19 and 25 years representing 93% of the total respondents, while the control group had 98% of the respondents aged between 19 and 25 years. Additionally, other respondents' age groups are distributed between 26 and 32 years represent 5% for the treatment group and 2% for the control group. However, only 2% of the respondents were between 33 and 39 years in the treatment group with none in the control group. There were no respondents that were aged 39 and above in the sample as at phase 1.

In addition, at phase 2, respondents in the treatment group comprises of students aged between 19 and 25 years representing 94% of the total respondents, while the control group had 97% of the respondents aged between 19 to 25 years. Respondents' age between 26 and 32 years were

6% in the treatment group and 3% in the control group. However, there were no respondents that aged 33 years and above in both groups at phase 2.

From the data in table 4.1, it could be observed that the majority of the respondents in the whole sample at both times were younger students between the age brackets of 19 and 25 years. This is consistent with previous studies that the samples of undergraduate students participating in entrepreneurship impact studies were within similar age groups while facing career decisions (Von Graevenitz et al., 2010; Linan et al., 2011).

Gender

Table 4.2Analysis of respondents' Gender for both treatment and control groups

	Phase 1 (T1)		*Phase 2 (T2)*	
	Treatment	*Control*	*Treatment*	*Control*
Gender				
Male	60%	60%	47%	62%
Female	40%	40%	53%	38%

Source: Survey results, 2016.

Table 4.2 above shows that at phase 1, the percentage of male respondents for both the treatment and control groups were 60%, while female respondents for both groups were 40%. At phase 2, female respondents in the treatment group increased to 53% while males decreased to 47%. Compared to the control group, male respondents slightly increased to 62% while female respondents decreased to 38%. Here, it could be seen that at phase 1, there were more males than females across both groups, while at phase 2, males were more only in the control group

than the treatment group. Though the variation in the difference in gender at phase 2 treatment group was not a striking contrast at about 6% more females than males. Overall, there were more males than females in the whole sample data. Similarly, Sanchez (2013) found that more males (representing 57%) than females (representing 43%) participated in their research that studied students' entrepreneurial intentions.

Course of study (Academic Discipline)

Table 4.3Analysis of respondents' Academic disciplines for both treatment and control groups

	Phase 1 (T1)		*Phase 2 (T2)*	
	Treatment	*Control*	*Treatment*	*Control*
Course of study				
Computer science	51%	74%	59%	79%
Microbiology	49%	26%	41%	21%

Source: Survey results, 2016.

Table 4.3 shows the academic disciplines of the respondents employed in the study comprises of computer science and microbiology. At phase 1, the treatment group comprises of respondents that study computer science representing 51% of the respondents, while 49% study microbiology. Compared to the control group, 74% of the respondents study computer science, while 26% study microbiology. At phase 2, there were 59% of the respondents studying computer science, while 41% of the respondents study microbiology. When compared to the control group, 79% of the respondents study computer science, while 21% of the respondents study microbiology.

In this regard, it can be observed that more respondents from computer science department participated in this study between the two groups at both times. This might be because of the continuous attraction towards technology-related degrees that may offer students varieties of prospective careers (Langdon, 2011; Pentyala et al., 2016). In addition, the percentage of the computer science respondents in the control group was more than twofold than the microbiology respondents. The distribution of science students in this research is in line with the study of Souitaris et al (2007) that measured science students' entrepreneurial intentions using control groups.

Entrepreneurial Knowledge

Table 4.4Analysis of respondents' Entrepreneurial Knowledge for both treatment and control groups

	Phase 1 (T1)		*Phase 2 (T2)*	
	Treatment	*Control*	*Treatment*	*Control*
Entrepreneurial knowledge				
Yes	85%	74%	89%	88%
No	15%	26%	11%	12%

Source: Survey results, 2016.

Table 4.4 shows the distribution of respondents' knowledge of an entrepreneur. At phase1, the treatment group is made up of respondents that have the knowledge of an entrepreneur were represented by 85% of the respondents, respondents that have no knowledge of an entrepreneur represented by 15% of the respondents. In comparison to the control group, 74% of the respondents have the knowledge of an entrepreneur while 26% of the respondents have no

knowledge of an entrepreneur. This may be because some of the respondents might have that know an entrepreneur might have interactions with entrepreneurial individuals that could either be their family, friends, lecturers, or entrepreneurial figures in the society. Although detailed reasons will be found in subsequent discussions and the implication on the finding on the subsequent analysis that may be linked to previous studies. This would be further discussed in subsequent chapters. At phase 2, the treatment group had respondents at 89% of the respondents that knew an entrepreneur, while only 11% have no knowledge of an entrepreneur. The control group also had respondents represented 88% that knew an entrepreneur, while 12% have no knowledge of an entrepreneur.

Overall, there were more respondents that have knowledge of an entrepreneur than respondents who have no knowledge of an entrepreneur at both times. Also, the percentage of respondents that have no knowledge of an entrepreneur reduced at phase 2 compared to phase 1. This could indicate that the respondents may be generally exposed to experiences that provide them insights into realizing the availability and access to an entrepreneur either from an entrepreneurship program (for the treatment group) or experiences within or outside the university setting (for the control group). This is in line with the study of Linan and Chen (2009) and Linan et al (2011) that individual who know an entrepreneur could have an intention towards entrepreneurship. In this connection, the respondents identified for this study are considered suitable in examining the effect of entrepreneurship education and identifying the factors that may influence students' entrepreneurial intentions in Nigerian Universities.

Parents' Occupational Status

Table 4.5 Analysis of respondents' Parents Occupational status for both treatment and control groups

	Phase 1 (T1)		*Phase 2 (T2)*	
	Treatment	*Control*	*Treatment*	*Control*
Parent occupation status				
Work for an organization in a private firm	19%	18%	17%	20%
Work for an organization in the public sector	34%	24%	37%	20%
Self-employed	42%	46%	43%	43%
Retired	4%	8%	1%	11%
Unemployed	1%	4%	2%	6%

Source: Survey results, 2016

Table 4.5 above shows the distribution of the respondents' parents' status of occupation. At phase 1, the treatment group comprise of respondents who have parents that are self-employment representing 42% of the sample, followed by parents working in the public sector at 34%. Respondents' parents found to be working in private firms were 19% of the sample respondents. Retired and unemployed parents were just 4% and 1% respectively. This category of parent may have been retired/unemployed because of age or health related issues. Nevertheless, the percentage is not very material to warrant further checks about the impact of parent's unemployment or retirement on the respondent's entrepreneurial skills or attributes. Compared to the control group, 46% of the respondents have self-employed parents, 24% working in the

public sector, followed by 18% working in private firms. Retired and unemployed parents were 8% and 4% respectively.

At phase 2, there were respondents with self-employed parents representing 43% of the sample. Respondents with parents working in the public sector were 37%. Respondents' parents working in private firms were 17%, while retired and unemployed parents were 1% and 2% respectively. Compared to the control group at phase 2, 43% of the respondents have self-employed parents, respondents' parents working in the public sector were 20%. Equally, 20% of the respondents also had parents working in private firms. Retired and unemployed parents were 11% and 6% of the respondents respectively.

The data presented in Table 4.5 shows that there were more respondents with parents into self-employment than any other job category. It could be viewed that private firm jobs could be considered as a form of entrepreneurship because employees adopt and develop key entrepreneurial skills in performing their roles within this sector. Therefore, it could be considered in this study that private sector jobs share similarities with self-employed jobs. Hence, the percentage of respondents with parents that are into entrepreneurship make up more than half of the respondents compared to public sector jobs across both the treatment and control groups at both times in the sample.

Consistently, Sanchez (2013) noted on entrepreneurial intentions that the percentage of students with parents in self-employment and private sector jobs was higher than parents in public employment. Furthermore, Van Auken et al (2006) highlighted that individuals parent' occupational status may serve as important influence in an individual's future career choice. In this regard, the response generated in Table 4.5 indicates a right direction for the type of

respondents identified in this study for two main reasons. First is consistency with the previous literature carried out nearly similar investigation. Second, it is useful to examine the latter author's viewpoint on individual future career choice as part of this investigation.

Family Income Level

In order to capture the respondents' actual perception of family income level, this study collected the data based on the Nigerian local currency for family income. This data was converted with the prevailing dollar rate as at the data collection period to convey the information in this study. The Nigerian Naira to U.S. Dollar exchange rate was #1 to $150 (Central Bank of Nigeria, 2016). Table 4.6 below shows the currency conversion table that informs the family income level presented in table 4.7.

Table 4.6 Currency Conversion from Nigerian Naira to U.S. Dollar

Family income level Nigerian Naira (#)	**Family income level (Dollar $) #1=$150**
#18,000 - #50,000	$120-$333
#51,000 - #150,000	$340-$1000
#151,000 - #250,000	$1006- $1666
#251,000 - #350,000	$1673- $2333
#351,000 and above	$2340 and above

Source: Currency Rate derived from the Central Bank of Nigeria (2016).

Table 4.7 Occupational status for both treatment and control groups

	Phase 1 (T1)		*Phase 2 (T2)*	
	Treatment	*Control*	*Treatment*	*Control*
Family income level				
$120-$333	4%	5%	4%	3%
$340-$1000	14%	10%	6%	6%
$1006- $1666	9%	16%	11%	8%
$1673- $2333	21%	9%	14%	9%
$2340 and above	52%	60%	65%	74%

Source: Survey results, 2016.

Table 4.7 above shows the distribution of respondents' family income level for both the treatment and control groups. At phase1, 52% of the respondents in the treatment group have family income of $2340 and above. This is followed by 21% of the respondents with family income between $1673 and $2333. 14% of the respondents reported to have family income between $340 and $1000. Only 9% of the respondents have family incomes between $1006 and $1666 and 4% were between $120 and $333. Compared to the control group at phase 1, 60% of the respondents have family income of $2340 and above, followed by 16% of the respondents with family income between $1006 and $1666. 10% of the respondents have income levels between $340 and $1000, while 9% have income levels between $1673 and $2333, and only 5% have family income levels between $120 and $333.

Consistently at phase 2 in the treatment group, 65% of the respondents have family income levels of $2340 and above. 14% of the respondents have income levels between $1673 and $2333. 11% of the respondents' family incomes were between $1006 and $1666. Family income level between $340 and $1000 were 65 of the respondents, while only 4% have family incomes between $120-$333. Compared to the control group, 74% of the respondents have family income of $2340 and above, 9% of the respondents have family income levels between $1673 and $2333. Respondents with income levels between $1006 and $1666were 8%, while only 6% had incomes between $340 and $1000 and 3% between $120 and $333.

Generally, by looking at the overall data in table 4.7, it could be observed that over half of the respondents across the whole sample for the treatment and control groups reported their family income levels to be from $2340 and above. From the rest of the categories of family income at both times in the entire sample, the percentage of respondents with family incomes between $1006 and $2333 were about two times higher than respondents with family income of $1000 and under. This is not surprising as many other studies have documented evidence about income variations among families (Meyer, 2002; Solt, 2008; Dahl and Lochner, 2012; Donovan, 2015).

Moreover, the large variation in the percentage of respondents between the family incomes group especially $2340 and above could be related with the sample in this study. The sample was drawn from students in private Universities (National Universities Commission, 2016). Most of the time, these institutions may only be affordable to certain class of individuals in the society unlike their counterparts in public Universities.

Overall, the demographic information revealed that the data comprise of; younger students, higher percentage of males in the data across both groups, but more female involvement in the treatment group at phase 2 measurement. There were also more students from the computer science discipline, and majority of the participants acknowledge knowing an entrepreneur. There was higher percentage of participants with entrepreneurial parents. Finally, a large number of the participants originate from higher earning families.

4.2.1 Reliability Tests

This sub-section presents the reliability tests of the variables measured on the whole sample in this study including entrepreneurial intentions, perceived desirability, entrepreneurial self-efficacy, and entrepreneurship education. This information is depicted on table 4.8 below.

Table 4.8 Reliability Analysis of Variables measured on respondents in the whole sample

Variables	**Number of Items**	**Alpha time 1 (*n*=181)**	**Alpha time 2 (*n*=178)**
Entrepreneurial Intentions (DV)	3	.941	.903
Perceived Desirability (IV)	16	.927	.841
Entrepreneurial Self-efficacy (IV)	22	.949	.924
Entrepreneurship Education (IV)	5	-	.876

From Table 4.8 above, the Cronbach's alpha for entrepreneurial intentions is (phase 1= . 941, phase 2= .903), Perceived Desirability(phase 1= . 927, phase 2= .841), Entrepreneurial self-efficacy (phase 1= . 949, phase 2= .924), Entrepreneurship Education (phase 2= .876). It could

be concluded that all the items measured for the constructs in the survey show a stable and consistent result as they are all above the accepted threshold of Cronbach's reliability test of .70 and above Pallant (2010).

These results are also consistent with previous findings of Kolevereid (1996), Chen et al (1998), Carter et al (2003), Souitaris et al (2007) and Sanchez (2013) whose results indicated values within the range of .70 to .99 on entrepreneurial intentions, perceived desirability, entrepreneurial self-efficacy, and entrepreneurship education. This information is presented below on table 4.9 that presents the format of the authors of the original scales and their reliability scores.

Table 4.9 Original Scales from Previous studies adapted in this study

Scale/Variables	**Authors**	**Alpha**
Entrepreneurial Intentions	Sanchez (2013)	0.75
Perceived Desirability	Kolevereid (1996); Carter et al (2003); Souitaris et al (2007)	Greater than 0.70
Entrepreneurial Self-efficacy	Chen et al (1998)	0.89
Entrepreneurship Education	Souitaris et al (2007)	0.71

4.2.2 Descriptive Statistics of Main Instruments

This subsection presents summary statistics of 4 key entrepreneurship instruments from the perceptions/preferences of the respondents measured based on the 5 point Likert scale items (i.e. '1' "no extent" and '5' representing to "a very great extent" for most questions). It should be recalled that the point '3' in the Likert scale was decided to be omitted from the analysis as it

indicates a neutral option of "undecided" (Sturgis et al., 2014). This was also clearly indicated in section 3.3 of chapter 3 of this thesis. The 4 key instruments are: Entrepreneurial Intentions, Perceived Desirability, Entrepreneurial self-efficacy, and entrepreneurship education. For each instrument, the mean, standard deviation and the range are discussed with a view to paving way to address all the research objectives. (1) to examine the impact of entrepreneurship education on students' entrepreneurial intentions in Nigerian Universities, and (2) to identify the factors that influence students' entrepreneurial intentions. Table 4.10 shows the measures of dispersions of the survey conducted on respondents from the treatment group (respondent undergoing entrepreneurship education) and compared to the control group (respondents not taking entrepreneurship education).

Entrepreneurial Intentions (EI)

Table 4.10 presents summary statistics for entrepreneurial intentions for the treatment group students.

Table 4.10 Presentation of Summary Statistics of EI Instrument for the Treatment Group

Variables	**Means**	**SD**	**Range**	**Time**
Entrepreneurial Intentions (1)	2.98	0.729	3.00	Phase 1
Entrepreneurial Intentions (2)	3.30	0.609	3.04	Phase 2

Treatment Group Time 1n= 88, Time 2 n=88

Table 4.10 presents summary statistics/analysis in the treatment group. Mean is a good measure of central tendency and has been previously used as an average measure for this variable in a number of studies (see Chen et al., 1998; Souitaris et al., 2007; Sanchez, 2013; Fayolle and

Gailly, 2013). The mean values for entrepreneurial intentions (EI) are presented for both phase 1 and phase 2. As it can be observed, the mean at phase 2 (i.e. M= 3.30), is higher than the mean at phase 1 (i.e. M=2.98) which indicates a slight improvement during the period. However, further observation of the standard deviation reveals that the mean value at phase 1 has a higher standard deviation (i.e. S.D.= 0.729) as compared with standard deviation (i.e. SD= 0.609) at phase 2. This interprets that there may be a possibility that exposure to entrepreneurship education could influence students' entrepreneurial intentions (Fayolle et al., 2006; Fayolle and Gailly, 2013). Table 4.11 below presents summary statistics for entrepreneurial intentions for the control group.

Table 4.11 Presentation of Summary Statistics of EI Instrument for the Control Group

	Means	SD	Range
Entrepreneurial Intentions (1)	2.82	0.590	2.46
Entrepreneurial Intentions (2)	2.61	0.545	2.80

Control group Time 1n= 90, Time 2 n= 90

On the other hand, it can be observed that in table 4.11 above, EI has decreased for the control group from (M= 2.82, SD= 0.590) at phase 1 to (M= 2.61, SD= 0.545) at phase 2. In this case, it can be suggested that the EI for students in entrepreneurship program (treatment group) may be higher than students not participating in the program (control group). The reasons for this change can be deduced to the fact that students may have to deal with the intensive demand of their science disciplines at the current stage of their degrees, which could alleviate their mind from thinking of pursuing an entrepreneurial career. However, there is no much difference between the standard deviations for both periods.

Consistent with the results above, Sanchez (2013) found results for EI (which proxied self-employed) to be higher for the treatment group (i.e. phase 1= 1.98, phase 2= 3.23) compared to the control group (phase 1= 1.86, phase 2= 1.85). Additionally, Souitaris et al (2007) found that entrepreneurial intentions were higher for students after going through entrepreneurship education (phase 1= 3.74, phase 2= 4.11). Though, the study of Sanchez (2013) was conducted on younger students in introductory entrepreneurship programs, this study takes a step beyond by examining an entrepreneurship education program that prepares students to be able to set up their businesses.

In addition, this study in Nigeria would improve on the contextual studies in entrepreneurship impact studies (see Souitaris et al., 2007; Karimi et al., 2016) in a different context. In this connection, further analyses would be required to check the significant difference between the treatment and control group.

Perceived Desirability for Entrepreneurship (PD)

This is the second instrument that measures respondents' perceived desirability for entrepreneurship. It could be recalled that perceived desirability for entrepreneurship is congruent with attitudes towards entrepreneurship (Kolevereid, 1996; Krueger et al., 2000; Fayolle et al., 2006). Table 4.12 provides a summary statistics of perceived desirability for entrepreneurship for the treatment group.

Table 4.12 Presentation of Summary Statistics of PD Instrument for the treatment Group

Variables	Means	SD	Range
Perceived Desirability (1)	2.99	.684	3.00
Perceived Desirability (2)	3.61	.351	1.24

Treatment Group Time 1n= 88, Time 2 n=88

It was shown in table 4.12 that the mean perceived desirability for phase 2 (M= 3.61, SD=.351) may be higher in relation to perceived desirability at phase 1 (M= 2.99, SD= .684). The standard deviation values show a small deviation from the mean scores across both times. The scores indicate that the level of perceived desirability is higher for respondents at the end of the program in the treatment group. This may be attributed to entrepreneurial experiences the respondents may be exposure to during entrepreneurship education program. Table 4.13 provides a summary statistics of perceived desirability for entrepreneurship for the control group.

Table 4.13 Presentation of Summary Statistics of PD Instrument for the Control Group

Variables	Means	SD	Range
Perceived Desirability (1)	3.88	.614	2.08
Perceived Desirability (2)	3.29	.541	3.00

Control group Time 1n= 90, Time 2 n= 90

However, in table 4.13, it can be observed that mean perceived desirability for entrepreneurship in the control group was higher at phase 2 (M= 3.88, SD= .541) than phase 1(M= 3.29, SD= .614). Similarly, it may also be attributed to the increased focus required in the science degrees as earlier explained for entrepreneurial intentions (EI) in the control group.

In comparing the treatment and control group, mean perceived desirability for entrepreneurship at phase 2 was higher for the treatment group. Respondents in the treatment group may have developed higher attitudes for entrepreneurship after participating in the entrepreneurship education program than respondents in the control group. In consistent with this observation, Fayolle and Gailly (2013) found that mean attitudes of students at phase 2 (M=5.08, SD=0.55) was higher than mean attitudes at phase 1 (M= 4.96, SD= 0.56). Though their studies did not employ a control group, this study used a control group to compare differences attributed to participating in entrepreneurship education.

In consistent with previous studies, it is also suggested that this study can establish a relationship between perceived desirability and entrepreneurial intentions in both treatment and control groups (Souitaris et al., 2007; Shinnar et al., 2014; Fayolle and Gailly, 2013). In this regard, further statistics would test the significant relationship between perceived desirability and entrepreneurial intentions as well as the significant differences in perceived desirability of entrepreneurship across the two groups in this study. This would allow drawing up inferences from the results.

Entrepreneurial Self-Efficacy (ESE)

This section presents the instrument employed to measure entrepreneurial self-efficacy (ESE) in this study. Table 4.14 provides the summary statistics of this instrument for the treatment group.

Table 4.14 Presentation of Summary Statistics of ESE Instrument for the treatment Group

Variables	Means	SD	Range
Entrepreneurial Self efficacy (1)	3.09	.489	3.00
Entrepreneurial Self efficacy (2)	3.69	.689	2.13

Treatment Group Time 1n= 88, Time 2 n=88

The mean values for entrepreneurial self-efficacy (ESE) in the treatment group are presented for both phase1 and phase 2 on table 4.14. As it can be observed, the mean entrepreneurial self-efficacy at phase 2 (i.e. M= 3.69, SD=.689) is higher than the mean entrepreneurial self-efficacy at phase1 (M= 3.09, SD=.489) which indicates an improvement during the period. This may be interpreted as participating in entrepreneurship education may influence the development of students' entrepreneurial self-efficacy. Table 4.15 provides a summary statistics of entrepreneurial self-efficacy for the control group.

Table 4.15 Presentation of Summary Statistics of ESE Instrument for the Control Group

Variables	Means	SD	Range
Entrepreneurial Self efficacy (1)	3.25	.619	2.77
Entrepreneurial Self efficacy (2)	3.01	.466	2.18

Control group Time 1n= 90, Time 2 n= 90

On the other hand, it can be observed in table 4.15 that ESE for the control group, ESE was lower at phase 1 (M= 3.25, SD= .619) than phase 2 (M= 3.01, SD= .466). In this regard, reasons

may be that as there's exposure to entrepreneurship education in this group, the students may either have the same level of ESE at the end of phase 2 measurement. Other reasons may be the occurrence of other situational factors that can influence the formation of ESE in the control group.

In consistent with previous studies, Sanchez (2013) found that mean ESE may be higher at phase 2 (M= 6.05) than phase 1 (M= 4.72). Souitaris et al (2007) also found higher self-efficacy at phase 2 when treatment and control groups were combined phase 1 (M= 4.12) and phase 2 (M= 4.20). Further analysis would be conducted in this study to check the significant relationship between ESE and entrepreneurial intentions and as well significant difference in ESE across the groups.

Entrepreneurship Education (EED)

This section provides an instrument to measure entrepreneurship education. This instrument was measured for participants in the treatment group only at phase 2, as entrepreneurship education was the experiment applied in this study. Table 4.16 provides a summary statistics of entrepreneurship education for the treatment group at phase 2.

Table 4.16 Presentation of Summary Statistics of EED Instrument for the Treatment Group

Variables	**Means**	**SD**	**Range**
Entrepreneurship Education (2)	3.62	.4355	2.77

Treatment Group Time 1n= 88, Time 2 n=88

Table 4.16 shows the mean entrepreneurship education is (M= 3.62) indicating that averagely, students that participated in entrepreneurship education had higher perceptions towards entrepreneurship learning indicators. This can be closely related to the mean value obtained of entrepreneurial self-efficacy at phase 2 (M= 3.69), higher mean perceived desirability at phase 2 (M= 3.61) and higher mean entrepreneurial intentions at phase 2 (M=3.61). This can be interpreted as entrepreneurial self-efficacy, perceived desirability of entrepreneurship and entrepreneurial intention can be higher due to participating in EED. This can be confirmed through further analyses of these variables.

Consistent with the above results, Souitaris et al (2007) also found higher perceptions for learning in entrepreneurship education programs (M= 4.96). Though, this study is undertaken in Nigeria, and the significant relationship between these constructs would be tested with further analysis to improve on the evidence for impact of entrepreneurship education in the Nigerian context.

Overall, the attitudinal data shows that means EI, PD, and ESE were higher at phase 2 survey compared to phase 1. The variables were also higher in the treatment group than the control group. However, these results are the outcome of preliminary studies. In order to reach meaningful conclusions from the study, further analysis of the data is required to test the hypotheses generated in the conceptual framework of this study.

4.3 Link between Entrepreneurship Education and Entrepreneurial Intentions

Prior studies suggest that participating in entrepreneurship education programs could be linked to the development of perceived desirability for entrepreneurship, entrepreneurial self-efficacy, and subsequently, entrepreneurial intentions (Souitaris et al., 2007). This study empirically test the proposition that Nigerian University students with an entrepreneurial exposure can be different in terms of their attitudes, and perception of confidence for entrepreneurship when compared with students without this exposure. In order to demonstrate the link between these variables, this study empirically test this proposition with treatment group students and control group students through the following hypothesis:

H1: At the end of the program in Nigerian Universities, there would be a difference in students' entrepreneurial career intentions between students that participate in entrepreneurship education students who have not participated in entrepreneurship program.

In this regard, an independent sample t-test analysis was employed to test the level of entrepreneurial intentions from the overall group level before and after the program. The test revealed the statistical significant differences in the means scores between the treatment group (n=88) and the control group (n= 90) at the two phases of measurement.

Table 4.17 Presentation of Phase 1 and 2 Treatment Difference Between Control and Treatment Group

(N= 181)

	Phase 1		Phase 2	
Variables	**Treatment**	**Control**	**Treatment**	**Control**
Entrepreneurial Intentions	2.98	2.82	**3.30**	**2.61**

The first two columns report mean values for the sample that is used in the analyses at phase 1 (before entrepreneurship education). The last two show mean values for phase 2 (after entrepreneurship education). If both numbers are underlined, it signifies that they are significantly different ($p < .05$). The control group students do not have access to entrepreneurship program at the beginning (phase 1) and end of the year (phase 2).

Table 4.17 above shows that for entrepreneurial intentions scores measured at phase 1, there was no significant difference between students in treatment group (M=2.98, SD= 0.729) and control group (M= 2.82, SD= 0.590); t (179) -.048, p= 0.96 (2-tailed). Therefore, the null hypothesis holds. This result was expected because entrepreneurship students were not exposed to the treatment (entrepreneurship education) as at the initial measurement phase that can create a difference with the control group. Added to this, the descriptive studies on (t**able 4.10 and table 4.11 in section 4.2.2 of this chapter**) also showed that there is no large difference in the entrepreneurial intentions between the two groups. However, upon exposing students to the treatment (entrepreneurship education) at phase 2, the results showed that there was a significant difference in entrepreneurial intention scores between students in the two groups, t (179) -0.27, $p<.05$, (2-tailed) with the treatment group (M= 3.30, SD=.609) scoring lower than the control group (M= 2.61, SD=.55). Therefore, we reject the null hypothesis that there is no statistical significant difference in entrepreneurial intentions between the treatment and control group at

phase 2. This also suggests that entrepreneurial intentions were higher for students exposed to entrepreneurship education in Nigerian Universities than students who were not exposed to entrepreneurship education. Therefore, hypothesis 1 was supported. See appendix 4 for more details.

Overall, the t-test result suggests that as entrepreneurship education was not conducted at the beginning of the program, students in the two groups would not be expected to significantly differ on their perceptions towards choosing an entrepreneurial career. But as entrepreneurship education was introduced to the treatment group, entrepreneurial intention of students in the treatment group was higher than entrepreneurial intentions of students in the control group at the end of the program. This finding provides evidence of the immediate relationship between entrepreneurship education and entrepreneurial intentions. This is consistent with previous entrepreneurship impact studies (Souitaris et al., 2007; Karimi et al., 2016; Nabi et al., 2016). The result suggests that the entrepreneurial learning components utilized by Nigerian universities to some extent are successful in raising students' entrepreneurial intentions. That is, within the existing program in Nigerian Universities, various aspects of entrepreneurship taught through the knowledge of the attitudes, values, how to recognize opportunities and start a business by engaging with the right people was appropriate in helping students to decide to become entrepreneurs than employees. Meanwhile, as for those students that did not obtain the opportunity of these learning experiences, their decision for becoming entrepreneurs did not improve. This indicates that the entrepreneurship program did make some impact on the participating students. The drop in the level of entrepreneurial intentions for the control group has several practical implications for this study.

Furthermore, since it has been proposed and justified that entrepreneurship education could be related to the formation of entrepreneurial intentions, it is possible that a link could be created between entrepreneurship education and the antecedents of entrepreneurial intentions with the following hypothesis:

H2: Nigerian students' participation in Entrepreneurship Education programs in Universities would impact on their perceived desirability of entrepreneurship.

H3: Nigerian students' participation in Entrepreneurship Education program in Universities would impact on their entrepreneurial self-efficacy.

The focus here is on students that participated in entrepreneurship education in this study (treatment group only). Therefore, it clearly points out that perceived desirability for entrepreneurship and entrepreneurial self-efficacy at phase 2 each serve as the dependent variable in each of the respective hypothesis test, while entrepreneurship education is the independent variable. In this section, a Pearson correlation matrix would be used to measure the correlation between the variables (see table 4.18 below). This is followed by a t-test result that provide further evidence of the correlation result in order to test hypotheses 2 and 3.

Table 4.18 Pearson Correlation Matrix Of Entrepreneurship Education And The Antecedents Of Entrepreneurial intentions Treatment Group (N= 88)

Variables	Perceived Desirability for Entrepreneurship (1)	Entrepreneurial self efficacy (1)	Entrepreneurial Intentions (1)	Perceived Desirability for Entrepreneurship (2)	Entrepreneurial self efficacy (2)	Entrepreneurial Intentions (2)	Entrepreneurship Education
Perceived Desirability for Entrepreneurship (1)	1						
Entrepreneurial self efficacy (1)	.633**	1					
Entrepreneurial Intentions (1)	.159**	.320**	1				
Perceived Desirability for Entrepreneurship (2)	0.013	.087	.028	1			
Entrepreneurial self efficacy (2)	.066	.073	.034	.712**	1		
Entrepreneurial Intentions (2)	.441	.065	.444**	. 653**	.290**	1	
Entrepreneurship Education	.052	.069	.987	.510**	.390**	.458**	1

**. Correlation is significant at the 0.05 level (2-tailed).

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

It can be observed in table 4.18 above that the Pearson correlation coefficients were all either strong or moderate and fall within an acceptable threshold (Pallant, 2010). The result shows a strong positive relationship between entrepreneurship education and perceived desirability for entrepreneurship (r= .510, p< 0.01). This means that the Nigerian entrepreneurship education introduced students to the values, attitudes and motivational drive of the entrepreneur, and students felt attracted to self-employment. Similarly, a moderate positive relationship between entrepreneurship education and entrepreneurial self-efficacy (r= .390, p< 0.01) was observed. This

means that entrepreneurship education program exposed students to build the self-confidence to accomplish certain entrepreneurial tasks. Consistent with the above results, Mueller (2011) also found similar results that students' orientation in entrepreneurship education significantly relates to attitudes towards entrepreneurship (B= .101, p< 0.01), and that interactive aspects of entrepreneurship education influence students' perceived behavioral control (B= .117, p< 0.01)

Table 4.19 Presentation of Phase 1 and 2 Treatment Difference Between Control and Treatment Group (N= 181)

	Phase 1		Phase 2		
Variables	**Treatment**	**Control**	**Treatment**	**Control**	**Eta Squared**
Perceived Desirability for Entrepreneurship	2.99	3.88	**3.61**	**3.29**	0.03
Entrepreneurial Self-efficacy	3.09	3.25	**3.69**	**3.01**	0.03

The first two columns report mean values for the sample that is used in the analyses at phase 1 (before entrepreneurship education). The last two show mean values for phase 2 (after entrepreneurship education). If both numbers are underlined, it signifies that they are significantly different (p< .05).

Table 4.19 above shows that at phase 1, there was no significant difference in perceived desirability for entrepreneurship between students in treatment group (M=2.99, SD= .684) and control group (M= 3.88, SD= .614); t (179) -.193, p= 0.85 (2-tailed) (See appendix 4 for more details).Therefore, we fail to reject the null hypothesis that there is no statistical significant difference in the perceived desirability for entrepreneurship between students in the treatment and control group at phase 1.

For entrepreneurial self-efficacy, there was also no significant difference between students in treatment group (M=3.09, SD= .689) and control group (M= 3.25, SD= .619); t (179) .47, p= 0.64 (2-tailed). Similarly, the null hypothesis still holds in this test that there is no statistical significant difference in the entrepreneurial self-efficacy between students in the treatment and control group at phase 1. These results suggest that since there was no experiment (exposure to entrepreneurship education) performed at this stage of measurement, it is similarly expected that there would be no significant differences in the cognitive perceptions between the treatment and control group students.

However, after the exposure to learning experiences of entrepreneurship education (at phase 2), it was revealed that there was a significant difference in the perceived desirability for entrepreneurship scores between students in the two groups, t (179) -2.69, $p<.05$, (2-tailed) with the treatment group (M= 3.61, SD=.351) scoring higher than the control group (M= 3.29, SD=.541). Also for entrepreneurial self efficacy scores at phase 2, there was significant difference between students in the two groups, t (179) -.97, $p<.05$, (2-tailed) with the treatment group (M= 3.69, SD=.489) scoring higher than the control group (M= 3.01, SD=.466). Therefore, we reject the null hypothesis that there is no statistical significant difference in both perceived desirability for entrepreneurship and entrepreneurial self-efficacy between the treatment and control group students.

This suggests that perceived desirability for entrepreneurship and entrepreneurial self-efficacy was higher for students that passed through entrepreneurship education. These findings indicate that the offering of the existing entrepreneurship program in Nigerian Universities had components that

addressed the development of students' attitudes that would make them attracted to entrepreneurship and improve their self confidence in performing varying roles related to starting a business. Therefore, it can be observed that the findings of this result indicate a positive impact of the examined entrepreneurship programs in Nigerian Universities.

In order to examine the degree of the impact of the program, the difference in the variables would require a measurement of their magnitude after the entrepreneurship program. This is achieved with the below Eta-squared measurement of effect sizes in terms of both perceived desirability for entrepreneurship and entrepreneurial self-efficacy below.

Figure 4.1Eta Squared Calculation for Perceived Desirability For Entrepreneurship

Eta squared= t2/ t2+(N1+N2-2)

= 3.61*2/3.61*2+ (88+90-2)

= 7.22/7.22+ 178-2

= 7.22/7.22+ 176

= 7.22/183.22 = **0.04**

Figure 4.2Eta Squared Calculation for Entrepreneurial Self-efficacy

Eta squared= t2/ t2+(N1+N2-2)

= 3.69*2/3.69*2+ (88+90-2)

= 7.38/7.38+178-2

= 7.38/7.38+176

= 7.38/183.38

= 0.04

It can be observed in figure 4.1 that the magnitude of the difference in the means (means difference=.411, 95% CI: .19 to .64) was small (eta squared= .04) suggesting that 4% of the variance in perceived desirability for entrepreneurship can be explained by the participation in entrepreneurship education program. While for entrepreneurial self-efficacy, figure 4.2 showed that that the magnitude of the difference in the means (means difference= .306, 95% CI: .09 to .51) was small (eta squared= .04) suggesting that 4% of the variance in entrepreneurial self-efficacy can also be explained by the participation in entrepreneurship education program. This result indicates that the existing learning activities within the Nigerian entrepreneurship education programs may have an impact by clearly making a difference, therefore implying that there could be a room for more improvement in the current offering of the entrepreneurship programs in Nigerian Universities in regards to raising students' attitudes, mindsets, and capabilities for entrepreneurship.

These findings were similar to Peterman and Kennedy (2003) who also found that participation in entrepreneurship education developed students' perceived attitudes and perceived feasibility of entrepreneurship than non-participation. Their study also found moderate effect sizes from the participation. The result of this study revealed small effect sizes of the perceptions, indicating that both this study and Peterman and Kennedy's demonstrate the magnitude of impacts created by entrepreneurship education programs. In this sense, the results of the Pearson correlation on table 4.18, the t-test result on table 4.19, and the effect sizes indicate the support for hypothesis 2 and 3.

On the other hand, the relevance of the entrepreneurship program may be extended to highlight the influence of the most prevailing factors in the formation of students' entrepreneurial intentions. In this regard, two hypotheses were developed to address this influence.

H4: Nigerian students' perceived desirability of self-employment would influence their entrepreneurial career intention.

H5: Nigerian students' perception of entrepreneurial self-efficacy would influence their entrepreneurial career intentions.

In order to test hypothesis 4 and 5, a Pearson correlation followed by a multiple regression analysis were performed for the whole sample for the two phases of measurements. This is presented on table 4.20 and 4.21 below.

Table 4.20 Pearson Correlation Of Entrepreneurial intentions And Its Antecedents at Phase 1 and 2 (N= 181)

Variables	Perceived Desirability for Entrepreneurship (1)	Entrepreneurial self efficacy (1)	Entrepreneurial Intentions (1)	Perceived Desirability for Entrepreneurship (2)	Entrepreneurial self efficacy (2)	Entrepreneurial Intentions (2)
Perceived Desirability for Entrepreneurship (1)	1					
Entrepreneurial self efficacy (1)	.583**	1				
Entrepreneurial Intentions (1)	.356**	.422**	1			
Perceived Desirability for Entrepreneurship (2)				1		
Entrepreneurial self efficacy (2)	.033	.081	.036	.838**	1	
Entrepreneurial Intentions (2)	.011	.075	.062	.628**	.318**	1

It can be observed in table 4.20 that all the variables measured at phase 1 and 2 have either a moderate or strong correlation among themselves (Hair et al., 2007), meaning that they move in the same direction. The results showed that entrepreneurial intentions were positively and significantly correlated to the perceived desirability for entrepreneurship (phase 1: r= .356, p<0.01; phase 2: r = .628, p<0.01), and to entrepreneurial self-efficacy (phase 1: r= .422, p<0.01; phase 2: r = .318, p<0.01). This means that at phase 1 and 2, as entrepreneurial intentions of students' improved, perceived desirability for entrepreneurship increases in the same direction. Similarly, as entrepreneurial intentions of students' increases, so does entrepreneurial self-efficacy. It indicates that Nigerian students who developed the attitude towards entrepreneurship

were willing to choose entrepreneurship as their career option, and those who felt capable to perform duties related to entrepreneurship were also willing to embark on an entrepreneurial career. Similar to this finding, Souitaris et al (2007) also found positive significant relationship between students' attitudes for self-employment, entrepreneurial self-efficacy and entrepreneurial intentions.

Table 4.21 Regression model of Perceived Desirability for Entrepreneurship and Entrepreneurial Self-Efficacy upon Entrepreneurial Intention at Phase 1 and 2 (N= 178)

	Intention (model at Phase 1) Standardized Coefficients	**Intention (model at Phase 2) Standardized Coefficients**
Perceived Desirability for Entrepreneurship	.364*	.261*
Entrepreneurial Self-Efficacy	.240*	.238*
R^2	**.28***	**.22***
Adjusted R^2	**.22***	**.21***

*p< 0.05

An evaluation of the regression output in table 4.21 indicate that at phase 1, 22% of the variance in Nigerian students' entrepreneurial intentions can be explained by the model and the model was statistically significant (F (2,178) = 3.715 at p < .05, adjusted R^2 = .22. See appendix 5 for the more details. Also, at phase 2, it showed that 21% of the variance in Nigerian students' entrepreneurial intentions can be explained by the model and similar to phase 1, the model was also statistically significant (F (2,175) = 1.126 at p < .05, adjusted R^2 = .21 (see appendix 5 for more details. In terms of the unique contribution made by each independent variable, the standardized regression coefficients showed that at phase 1, perceived desirability made the

strongest contribution to explaining the dependent variable - entrepreneurial intentions (*Beta*= .364, t= 1.57, p= .000 p< .05) when the variance explained by entrepreneurial self-efficacy (*Beta*= .240, t= 2.30, p= .024 p< .05) was controlled for. This means that perceived desirability for entrepreneurship makes the strongest contribution in explaining entrepreneurial intentions at phase 1 measurement at 36.4% at which is higher than entrepreneurial self-efficacy at 24%. This suggests that before the commencement of entrepreneurship education, students' felt that the attractiveness towards entrepreneurship was more important than their self-confidence in undertaking certain entrepreneurship tasks while deciding to become entrepreneurs. On the other hand, phase 2 measurements showed that entrepreneurial self-efficacy made the strongest contribution to explaining entrepreneurial intentions (*Beta*= .238, t= 0.07, p= .000 p< .05) when the variance explained by perceived desirability for entrepreneurship (*Beta*= .161, t= 2.30, p= .000 p< .05) was controlled for. This means that entrepreneurial self-efficacy makes the strong contribution in explaining entrepreneurial intentions at phase 2 at 23% than perceived desirability for entrepreneurship at 16%. This means that students' self-confidence in undertaking certain entrepreneurship tasks were slightly lower than their attractiveness towards entrepreneurship.

The reasons for these findings could be that as data was collected during the final stages of the entrepreneurship program, and students might have expressed their immediate confidence to carry out variety of tasks associated with new venture creation. Consistent with the results above, Souitaris et al (2007) similarly found significant adjusted regression coefficients for entrepreneurial intentions at phase 1 (adjusted R^2 =0.35, p< 0.001) to be slightly higher than

phase 2 (adjusted R^2 =0.32, p< 0.001), with standardized coefficients (phase 1 Beta= .24, .22; phase 2 Beta= .29, .16, all with p<0.001).

Generally, observation from the result of the regression output in table 4.21 indicate that there could be other situational variable (s) that may account for students' variance in entrepreneurial intentions other than their perceived desirability for entrepreneurship and entrepreneurial self-efficacy. In order to obtain the unique contribution of each independent variable on the dependent variable, the control factors measured in the study (Age, gender, course of study, personal knowledge of entrepreneur, parent occupational status, and family income level) would be introduced in the regression model. This would provide results that explain the unique contribution of each variable on the dependent variable (entrepreneurial intentions) while controlling for the influence of others (Mueller, 2011). Hence, table 4.22 below presents a multiple regression taking cognizance of the control variables of the whole sample at phase 1 and 2.

Table 4.22 Regression for the control and independent variables for the Whole Sample at phase 1 and 2 (N= 181)

	Phase 1		Phase 2	
	Model 1	**Model 2**	**Model 1**	**Model 2**
Dependent Variable Entrepreneurial Intentions				
Control Variables				
Age	-.058	.102	.004	.012
Gender[1]	.003	-.013	-.076	-.078
Course of Study[2]	-.069	.090	**.011***	**.110***
Entrepreneurial knowledge[3]	.027	-.048	.001	.005
Parent Status[4]	.037	.053	.109	.105
Family Income	-.010	.143	-.127	-.131
Independent Variable				
Perceived Desirability		**.213***		**.270***
Entrepreneurial Self Efficacy		**.250***		**.241***
R^2	.32	**.45***	**.34***	**.52***
Adjusted R^2	.30	**.41***	**.23***	**.44***

Notes: *p< 0.05
[1] Gender: 0 male, 1 female; [2] Course of Study: 1 computer science, 0 microbiology;
[3]Entrepreneurial Knowledge: 0 Yes, 1 No; [4]Parent status dummy variable: 0 entrepreneurial jobs, 1 others.

In the regression models in table 4.22 above, it was observed that the models at the two phases of measurements showed significant regression coefficients (phase 1 model 2: adjusted R^2= .41, p< 0.05; phase 2 model 2: adjusted R^2= .44, p< 0.05). It means that the regression model accounted for 41% of the variance in entrepreneurial intentions at phase 1, and 44% at phase 2 and the two models were statistically significant. See appendix 6 for more details.

It can also be observed, in table 4.22 that at both phases, only control variables were entered in model 1. In phase 1, all the control variables (Age, gender, course of study, personal knowledge of entrepreneur, parent occupational status, and family income level) accounted for a non-significant amount of variance in entrepreneurial intentions (adjusted R^2= .32, p< 0.05). This means that these sets of control variables made some contributions but were not significant to explain the variance in entrepreneurial intentions.

However, at phase 2, only course of study among the control variables had a significant influence on entrepreneurial intentions (model 1/ model 2 Beta= .011/ .110, p< 0.05). This means that students studying computer science tend to have higher entrepreneurial intentions than microbiology students. This is consistent with Mueller (2011) findings that course of study can have significant influence on entrepreneurial intentions. It also confirms previous studies that science students have the tendency to create their own businesses (Luthje and Frank, 2003; Souitaris et al., 2007; Maresch et al., 2016).

Overall, the findings on table 4.22 showed that the two independent variables at both phases is that both perceived desirability for entrepreneurship and entrepreneurial self-efficacy are important for entrepreneurial intentions to occur; all two variables showed a significant influence on entrepreneurial intentions at phase 1 and phase 2 measurements (perceived desirability for entrepreneurship (phase 1/ phase 2: Beta = .213/ .075), entrepreneurial self-efficacy (phase 1/ phase 2: Beta = .250/ .041, all significant at p< 0.05). However, an important observation made from the results is that the variable perceived desirability for entrepreneurship seems to be the strongest between the two variables at both phases. It indicates that within the context of this study, Nigerian University students may have developed a high interest to engage in entrepreneurship, and would be ready to become self employed even though they may be less

equipped with the required skills needed to start the business. In addition, it could be suggested from the result that entrepreneurial self efficacy has a lesser impact on entrepreneurial intentions than perceived desirability for entrepreneurship. While considering the influence of other variables constant, the coefficient for entrepreneurial self-efficacy at the two phases were not as strong as the coefficient of perceived desirability for entrepreneurship. These findings have important implications for the design of entrepreneurship education programs in the context of Nigerian Universities.

Similar findings in support of this results were found by Mueller (2011) that attitudes towards entrepreneurship (perceived desirability for entrepreneurship) significantly predict entrepreneurial intentions (phase 1 Beta= .341; phase 2 Beta= .267, all $p< 0.01$), and perceived behavioral control (entrepreneurial self-efficacy) significantly predict entrepreneurial intentions (phase 1 Beta= .376; phase 2 Beta= .267, all $p< 0.01$). The finding of this study provides evidence of the need to consider differences in contexts when developing and delivering entrepreneurship education programs. The results obtained from the Pearson correlation table 4.20 and multiple regressions on table 4.21 and 4.22 provide support for hypotheses 4 and 5.

Overall, the results of the statistical analysis reveal that variables identified in the conceptual framework of this study were valid in this thesis. The hypothesized relationships based on entrepreneurial intentions theories also provided evidence of its applicability in various contexts.

4.4 Relative Success of Entrepreneurship Programs in Nigerian Universities

This section reveals the extent to which the existing entrepreneurship program is a reflection of a successful entrepreneurship education program in terms of influencing students' intention towards self-employment. Based on the statistical findings of this study, the entrepreneurship program delivered in Nigerian Universities is to some extent successful in impacting the entrepreneurial intentions of students. It does so through raising their perceived desirability for entrepreneurship, while the increase in entrepreneurial self- efficacy has less impact on entrepreneurial intentions.

In terms of the findings that presented the positive impact created by the entrepreneurial learning component and perceived desirability for entrepreneurship, this element increased for the treatment group students at phase 2 measurement (M= 3.61) compared to (M= 2.99) at phase 1. From the perspective of the learning component, aspects of the knowledge of the attitudes, values and motives of the entrepreneur may be reflected within the existing entrepreneurship education program taught in Nigerian universities. For example, the first semester modules themed; (entrepreneurship and innovation) concentrate on introducing the concept of entrepreneurship in the Nigerian environment. This type of module has been shown to have made a strong ground within a typical start-up education program that allows participants to have a background knowledge of their closer environment (Linan et al., 2011). The knowledge of the Nigerian business environment can exert its effect on the extent to which the student can see the positive side of embarking on entrepreneurship locally, thereby raising their level of perceived desirability for entrepreneurship.

The wider knowledge of the phenomenon of entrepreneurship and values can be attained through knowledge of making wealth, independence, innovation, various ways achieving self- realization, and independence (Kolevereid, 1996; Saeed et al., 2014). The knowledge of key entrepreneurial concepts could influence these attitudinal variables. In this regard, some of these concepts can be reflected in the Nigerian entrepreneurship program through the various facets of entrepreneurship in the area of family business, social, women, technology entrepreneurship, and intellectual property in the classroom in the form of lectures. Also, the concept ethics and social responsibility within the curriculum might have also played a role in understanding the values of entrepreneurial firms in the society.

In terms of the rise in entrepreneurial self-efficacy at the end of the entrepreneurship program (M= 3.69) compared to the beginning (M=3.09), may be related to the component that teaches Nigerian students the steps to take in creating new business ventures and how to evaluate viable business opportunities. As an indicator of entrepreneurial learning, the "know what" and "know when" to start of starting a business emphasizes learning activities that expose students in such areas (Souitaris et al., 2007). According to the Nigerian entrepreneurship curriculum, the module revealed to embed the confidence to carryout the varying steps in creating new business is only represented by the concept "sources of funds" and marketing module. These may not be the only steps. It is important to teach students the management of human resources, controlling costs, entry strategy. Teaching these concepts can develop students' entrepreneurial confidence in their how to start a business (Henry et al., 2005). The absence of a whole part of these concepts in the Nigerian entrepreneurship curriculum can also aid in explaining why the findings showed a lower entrepreneurial self-efficacy than perceived desirability for entrepreneurship among the students.

However, the lower level of self-confidence may not be felt as much because aspects of business opportunity evaluation has been introduced as indicated in the curriculum. The knowledge of these concepts is put into practice through writing of a business plan. This defines the extent of the practical skills taught to the students in the Nigerian entrepreneurship curriculum. The business plan has been suggested to be insufficient in entrepreneurship education (Blank, 2013). It is found to be more influential on students' confidence than their attitudes. An entrepreneurial learning component is not complete without providing students with social skills (Souitaris et al., 2007). Since the curriculum do not utilize social sessions as part of the program, the curriculum may be deficient in this learning component except for few cases that local entrepreneurs are invited to speak to the students. This also contributes to the low magnitude of the impact created by the program in terms of both perceived desirability for entrepreneurship and entrepreneurial self-efficacy (PD = 0.04, and ESE =0.03). However, lower magnitude does not mean that the program has not made any impact. In fact, the strength of the element perceived desirability for entrepreneurship has been reflected within the program, which is typical of an awareness creation program that can provide students with the understanding of entrepreneurship.

CHAPTER 5 DISCUSSION

Discussion

The purpose of this research was to develop an entrepreneurship education framework by examining the impact of entrepreneurship education on students' entrepreneurial intentions in the Nigerian context. In this regard, the study aimed to address the following questions: Do entrepreneurship programs enhance Nigerian students' entrepreneurial intentions and its antecedents? And, which factors are more important in influencing entrepreneurial intentions of students?

An extensive examination of the literature on entrepreneurship education and entrepreneurial intention was conducted based on Shapero and Sokol's (1982) theory of the entrepreneurial event, Ajzen's (1991) theory of planned behavior, and Bandura's (1986; 1997) social cognitive theory. The literature revealed certain gaps in particular in regards to entrepreneurship education in Nigeria. Few research exist that examine impact of existing entrepreneurship programs in the country. Specifically, there is no research that compares students exposed to entrepreneurship education and students not exposed to entrepreneurship education. Little research is available that establish the link between entrepreneurial learning from these programs and students' perceptions. Little is known about the factors that play significant roles in influencing Nigerian students' entrepreneurial intentions. Having identified the existing gaps, a conceptual framework was developed to examine entrepreneurship education at the undergraduate level in Nigerian Universities using a pretest-posttest design with particular hypotheses based on the above entrepreneurial intentions theories. In addition, it provides quantitative data in order to examine the impact of entrepreneurship education on student's entrepreneurial intentions and its

antecedents on Nigerian University students, and to identify which factors influence their entrepreneurial intentions. Thus, this study has contributed to entrepreneurship education research in a developing country context. Below is a revised conceptual framework used as a guiding framework for this study. The presentation of the framework would aid in understanding the purpose of this study.

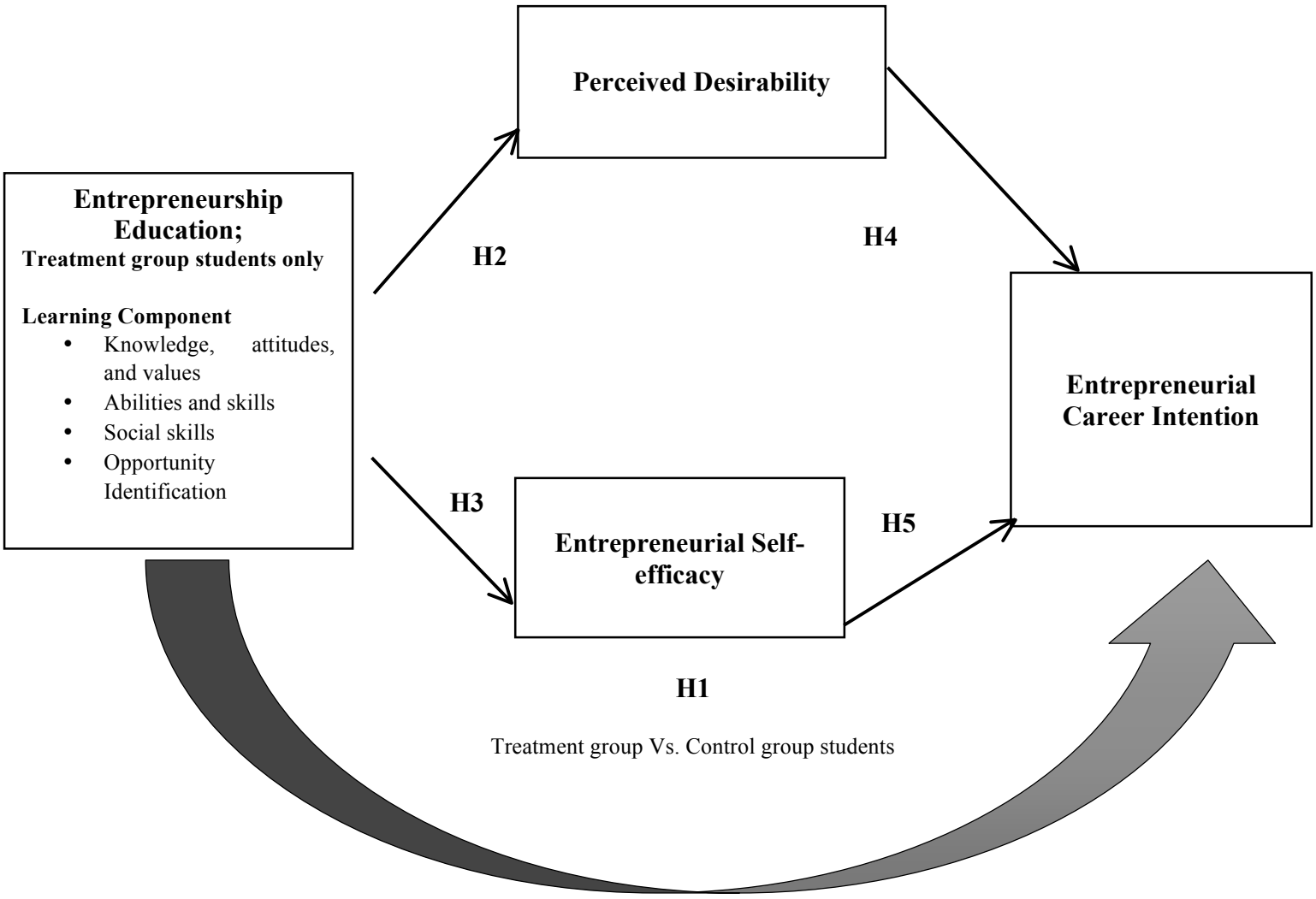


Figure 5.1 Conceptual Framework of the Study

5.1 Do entrepreneurship Programs Enhance Nigerian Students' Entrepreneurial Intentions and Its Antecedents?

The study found confirmation for the impact of the Nigerian entrepreneurship education on entrepreneurial intentions, perceived desirability of entrepreneurship and entrepreneurial self-efficacy. The results showed that the post-test (phase 2) mean values of perceived desirability of entrepreneurship, entrepreneurial self-efficacy and entrepreneurial intentions were improved in relation to the pre-test (phase 1) mean values. It is evident in this study that entrepreneurial learning from the program is linked with the development of perceived desirability of entrepreneurship and entrepreneurial self-efficacy. The study illustrated that entrepreneurship education programs are avenues for obtaining knowledge of entrepreneurship that encourage students by developing their attitudinal mindsets, skills and abilities to create new ventures. The findings were in line with previous studies on the impact of entrepreneurship education programs (Souitaris et al., 2007; Fayolle and Gailly, 2013; Karimi et al., 2016).

However, it contrasts with prior impact studies in Nigeria on entrepreneurship education. The impression from the Nigerian context is that either are no clear significant positive results or no significant differences among students in their entrepreneurial intentions and its antecedents. For example, Babatunde and Durowaiye (2014) looked at Nigerian University students who were facing career decisions and their results showed that there is a relationship between entrepreneurship education and self employment intentions; the results of this study showed clearer significant results beyond Babatunde and Durowaiye's (2014) findings. Garba et al (2015) found that there were no significant differences among students in entrepreneurial intentions; once again, this study found significant differences between students in treatment and

control group in their entrepreneurial intentions, perceived desirability and entrepreneurial intentions.

Why this study differs from prior studies in Nigeria could be down to a variety of reasons. Much of the focus of the studies already conducted in Nigeria are centered around descriptive research design, cross sectional studies and, students' sample combined from both scientific and managerial academic disciplines or exclusively management fields. This study has widened the focus in the analysis, i.e. used inferential analyses, employed pre-post test design with a control group, and used students' sample from scientific academic discipline, particularly students studying computer science and microbiology degrees. These steps were certainly improved than that of Babatunde and Durowaiye and Garba et al. There is also a fact that preference for either self-employed career or organizational employment was asked in inferring entrepreneurial intentions, perceived desirability was asked through highlighting various attitudinal values of entrepreneurship that relate to perception of attractiveness, and entrepreneurial self-efficacy was asked in the form of task specific self efficacy instead of general self-efficacy. These measures provide a more elaborate explanation of entrepreneurial intentions and its antecedents. Nevertheless, findings of this study suggests that in terms of students' entrepreneurial intentions, the treatment group students and control group students showed statistical significant differences at the end of entrepreneurship education with treatment group students having higher entrepreneurial intentions than the control group – a different outcome to that previously found within the Nigerian context.

This study shows a clear enhancement in the level of perceived desirability of entrepreneurship, entrepreneurial self-efficacy, and entrepreneurial intentions. Thus, a positive mindset and capabilities towards self-employment paves the way for subsequent entrepreneurial behavior.

In particular, the significant increase in the mean values of perceived desirability of entrepreneurship may be reflected by the emphasis laid on persuading students on entrepreneurship and changing of attitudes within the entrepreneurship education programs. For example, the discussions during class lectures or cases on stories of successful entrepreneurs in the Nigerian environment such as the famous Dangote Group, the characteristics distinction between an entrepreneur and non-entrepreneur, and the socio economic values that entrepreneurship create for individuals. This may include gaining financial success, attaining personal vision, playing key roles in the family, the ability to become independent, creative, and recognized in the society.

A possible explanation for the increase in entrepreneurial self-efficacy could also be related in the enactive experiences, vicarious learning, and social persuasion that the participating students might have obtained during the entrepreneurship education programs. The Nigerian entrepreneurship program underscore the practical element through developing a business plan by students, and the analysis of successful entrepreneurs or the invitation of guest speakers through local entrepreneurs or alumni that can be viewed as successful role models by the students in order to obtain feedback or mentoring.

The increase in entrepreneurial intentions of students may have been because students probably realized a new discipline that they earlier had insufficient or no idea about (that is, entrepreneurship) and had the opportunity to identify the positive dimensions of venturing into an entrepreneurial career other than the conventional employable jobs. This is especially that these students within the sample of this study are coming from scientific fields.

However, the magnitude of the impact of the Nigerian entrepreneurship education program in this study had a weaker proportion. It should be noted that weakness of impact does not imply insignificance or that the entrepreneurship education program did not make an impact at all. A plausible explanation for the weaker proportion of the impact could be related to the design of the entrepreneurship education curriculum. Despite the emphasis made within the Nigerian national entrepreneurship curriculum in terms of attitudes and competency for self-employment among multidisciplinary students, the set up of the entrepreneurship curriculum might not have the full potential in creating huge impact on students as largely expected. It should be noted that specific general studies programs in Nigerian Universities are usually taught by combining students from all disciplines within same modules in large class size by assuming that the core of the programs are relevant and is understood by all students (NUC, 2011). The entrepreneurship curriculum studied in research fall within this group. In this case, it might be challenging to bring on board concepts within computer science and microbiology students to identify with in order to optimally develop entrepreneurial mindsets entrepreneurial competence experiences. Another explanation could be the type of guest speakers that might have been visiting the university for presentations may be grounded in highly established corporate firms rather than small business

enterprises. Irrespective of these irregularities of the curriculum, the program was able to make some positive impact on its students.

Entrepreneurial learning during entrepreneurship education enhances students' entrepreneurial intentions and its antecedents. These arguments can throw some light into the impact of entrepreneurship programs in developing countries.

Another interesting finding can be observed in **table 4.17** that the level of entrepreneurial intentions for the control group students dropped from M= 2.82 at phase 1 to M= 2.61 at phase 2. This suggests that students without an exposure to entrepreneurship education might lose interest in entrepreneurship by the end of the year. This can be related to the observation that the program does not create a much larger significant impact on students' entrepreneurial self-efficacy compared to perceived desirability (**see table 4.19**).

5.2 Which factors are important in influencing entrepreneurial intentions of students?

Considering the results of this empirical study, it seems that for the whole sample, perceived desirability of entrepreneurship and entrepreneurial self-efficacy are the major factors explaining students' entrepreneurial intentions. In other words, the most important view developed from this study is that the decision to choose an entrepreneurial career in the Nigerian context depends on the perceived desirability and entrepreneurial self-efficacy of the student. This has been agreed by many prior entrepreneurship studies (Krueger et al., 2000; Autio et al., 2001; Linan et al.,

2011; Fayolle and Gailly, 2013;). However, the findings contrast with the view of several prior studies in the Nigerian context.

Majority of the prior literature in this specific context laid huge emphasis on students' personal characteristics (Izedonmi and Okafor, 2010; Ekpoh, 2011; Ramoni, 2016) than the literature on cognitive perceptions (Akanbi 2013; Garba et al., 2014) as the elements in explaining entrepreneurial intentions. For example, Ramoni (2016) looked at undergraduate students and found that personality characteristics such as risk taking and innovativeness of students were important in explaining entrepreneurial intentions. Similarly, Izedonmi and Okafor (2010) found the importance of tolerance for ambiguity, need for achievement, emotional stability, and ability to seize equal opportunity in the same sense; the results of this study showed different result from these authors.

Akanbi (2013) found that general self-efficacy of undergraduate students across different year groups to be significant in explaining entrepreneurial intentions. Garba et al (2014) found that perceived desirability and perceived feasibility are insignificant in explaining entrepreneurial intentions; once again, the result of this study showed significant relationship between the variables and entrepreneurial intentions.

Reasons why this study differs from prior studies in Nigeria could be that many of the studies limited their research to only students' personal characteristics, the use of a generic of the construct of "self-efficacy", the use of different year group students, and the cross sectional nature of most studies. This research goes a step beyond the predominant focus of the Nigerian

literature by focusing on more powerful measures and analyses. This includes the use of cognitive measures in explaining entrepreneurial intentions (perceived desirability of entrepreneurship and entrepreneurial self-efficacy) - which are more powerful than the trait approach in explaining an individual's intention. A detailed explanation for this argument is provided in the literature review chapter of this thesis. In addition, this study used undergraduate students from the same year group which were fit for this study as they were in the period of being expected to consider making decisions about their future careers, therefore, it seems more reasonable to study their entrepreneurial intentions. This study also used a more preferred measure of self-efficacy - "entrepreneurial self-efficacy" in the case of task specific measure for entrepreneurship than the generic perceived control measure Akanbi (2013) used "general self-efficacy". Further more, given that this research adopted a pre-post test research design in the analyses, it gives the opportunity to study the level of students' cognitive perceptions before and after an entrepreneurship program, which has not been employed by the studies identified.

Therefore, the finding of this study provides a more convincing result in regards to the determinants of entrepreneurial intentions among Nigerian University students. In this regard, it can be reasonable to suggest that from an educational perspective, an entrepreneurship education program needs to put into consideration how to increase in students, perceived desirability and entrepreneurial self-efficacy.

In respect to the entrepreneurial intention model developed in this study, perceived desirability and entrepreneurial self-efficacy were significantly related to entrepreneurial intention and in the right direction. Thereby, the conceptual framework support theoretical proposition developed.

The strength in students' perceived desirability of entrepreneurship more than entrepreneurial self-efficacy in influencing entrepreneurial intentions may be due to the success of the program in raising perceived desirability and with a lesser impact on entrepreneurial self-efficacy. It may also reflect how Universities emphasize on measures that address change in attitudes and encouragement of students towards entrepreneurship so as to increase the number of potential entrepreneurs such as the invitation of guest speakers to provide lectures and words of advise specifically targeted for students in the Universities (NUC, 2011).

However, other factors considered in this study (Age, gender, entrepreneurial knowledge, parents' occupation, and family income) did not prove to be as much important except for students' course of study.

The significance of course of study indicates that computer science students had higher entrepreneurial intentions than microbiology students. A reason for this significance could be that at some point within the entrepreneurship education program, lecturers might have made references to successful entrepreneurs that took advantage of technology in the Nigerian business environment such as "Konga" and "Jumia" indigenous companies in the Nigerian e-commerce sector (David-West, 2016). The identified companies are regarded as successful popular e-commerce start-ups focusing on online retailing in Nigeria. These examples can offer students to view that technology can aid success in entrepreneurship in Nigeria. Another reason could also be that computer science degrees attract higher students' enrollment in Nigerian Universities as it may be perceived as a revolutionary path that can offer alternative careers for economic development in entrepreneurship more than microbiology or other academic disciplines

(Ogunsola and Aboyade, 2005). This has implications for the design of entrepreneurship education in Nigerian Universities.

The insignificance of age could be explained through the insignificance of personal knowledge of entrepreneur found in this study (to be discussed later). Students associating with their colleagues or peers in the University may have nothing to do with a reflection of or transition to entrepreneurship. The nature of students' peers can be seen in the similar age group across the sample of this study (table 4.1 in chapter 4). Majorly, over 90% of the students are between 19 and 25 years, with an average of 19 years. Thus, it is noted that in the Nigerian context, younger students enroll in Universities (Adetunji et al., 2016). Therefore, the findings this study is in contrast to Caliendo et al (2009) that found a positive relationship in a German context. This signifies that when studying entrepreneurial intentions in the Nigerian context, age is not considered as important. This implies that there is a need for the inclusion of peer group relationship for younger students in University entrepreneurship education programs and within the campus environment.

In regards to the insignificant influence of gender on entrepreneurial intentions, one explanation for this result could be related to the significance of students' course of study found in this study. This means that studying computer science or microbiology ruled out being a male or female when deciding on entrepreneurial career. Careers in science, technology, engineering and, mathematics (STEM) are mostly regarded as male dominated (Sadler et al., 2012). Recently, more female participation in STEM careers is well motivated. An important incentive provided in such careers is the higher pay equality by gender compared to non- STEM careers (Oh and

Lewis, 2011). In other words, equal pay is given to both males and females in STEM careers than non-STEM careers. This finding concurs with a recent study in developing countries that there is an insignificant relationship between gender and students' entrepreneurial intentions (Ahmed et al., 2010).It also contrasts with the findings of Veciana et al (2005), Wilson et al (2007), Dabic et al (2012), and Gerba (2012) that males have higher entrepreneurial intentions than females. Therefore, further studies are needed to check the link between students' gender and their course of study. The findings could open up interesting insight into STEM related careers among females in developing countries.

In terms of entrepreneurial knowledge, its insignificance in influencing entrepreneurial intentions may probably be that students developed a negative reflection of the entrepreneurs they knew and associated with. Despite the fact that the proportion of students showed that they knew an entrepreneur was substantial over (70%), the entrepreneur's activity may not be meaningful to them in deciding to become entrepreneurs. These forms of entrepreneurs might be their peers or colleagues, and family members. They might also be introduced to the stories on entrepreneurial journeys of successful Nigerian entrepreneurs within the entrepreneurship program such as the Dangote group (Akinyoade and Uche, 2016). Vicarious experiences from role models allow individuals to observe and perceive oneself as that role model (Zhao et al., 2005). In regards the success of Dangote might be perceived unrealistic for students to achieve such positions, thereby resisting the consideration of such entrepreneurs when deciding their entrepreneurial careers. The findings supports the view of Franco et al (2010) that entrepreneurial families or friends are not considered in entrepreneurial intentions. It however contrasts with the view that role models are

related to students' entrepreneurial intentions (Van Auken et al., 2006; Bosma et al., 2012). It would be useful for future studies to look into the specific entrepreneurs that students know.

In terms of parents' occupation, the non-significance could be that students may have referred to their parents as the entrepreneurs they knew and likewise, did not influence their decision about entrepreneurship. This is reflected in the insignificance found in entrepreneurial knowledge as earlier explained in this study. They might have witnessed their parents encountering real life challenges associated with taking risks during uncertainties, managing their firms, employees, gaining market share to survive competition, and controlling finances. The sample on table 4.5 in chapter 4 of this thesis showed that about 60% of students have parents with entrepreneurial jobs. This includes parents in self-employment and those working in private firms (McDade and Spring, 2005). It is not surprising for students to have a different opinion about their parents' occupation especially in self-employment (Mungai and Velamuri, 2009). In this case, future studies may investigate students' perception of their parents' job experiences irrespective of the career.

Regarding family income level, its insignificance could be explained by the high and significance of perceived desirability of entrepreneurship developed by students. Students might have thought that they can become entrepreneurs through independence in their approach to work. The motivation for entrepreneurship in an individual can surpass one's financial support from the family (Wang and Wong, 2004). Alternatively, it could be that students might have associated sole earners of their family income to their fathers in the natural sense. However, women heads in Nigerian families could also play major roles in their children's future.

Recently, Angel-Urdinola and Wodon (2010) found that it is popular among non-poor families in Nigeria that women take over about 37% of household income and decision-making. In this regard, similar to parents' jobs, it may be ideal for future studies to obtain data on the range of income contribution of both male and female heads of households in order to ascertain their role and obtain each parent's financial contribution. The above discussions lead to the theoretical and practical implications derived from the study discussed in the next section.

5.3 Implications of the Study

Findings from this study have several theoretical and practical implications. Discussion of the theoretical implications for entrepreneurial intentions would be conducted followed by the theoretical implications for entrepreneurship education in Nigerian Universities. Subsequently, the practical implications for entrepreneurship education would be discussed.

5.3.1 Theoretical Implications for Entrepreneurial Intention Models

The results of this study provides more evidence in entrepreneurial research for the appropriateness of Ajzen's Theory of Planned Behavior (1991) in explaining and understanding of entrepreneurial intentions in developing countries such as Nigeria. It also sheds more light to the theory of planned behavior by measuring the impact of entrepreneurship education, which serves as an external influence on entrepreneurial intentions and its antecedents (perceived desirability for entrepreneurship and entrepreneurial self efficacy). Therefore, it showed that the theory of planned behavior could be regarded as an important framework that can be used to measure the impact that entrepreneurship education programs have on students.

In this regard, the findings confirm the similarity and substantial support that Shapero's entrepreneurial event model (1982) offers to Ajzen's theory of planned behavior (1991) in explaining the entrepreneurial event since participating in entrepreneurship education can be considered as a form of displacement. It also provides more evidence that entrepreneurship education is well grounded in Bandura's social cognitive theory (1997). Consequently, findings in this thesis provide empirical support to the use of intention models as reliable models, more especially the theory of planned behavior.

The implications derived from this study confirms the findings of previous research on entrepreneurial intentions (Krueger et al., 1993; Krueger et al., 2000; Fayolle et al., 2006; Souitaris et al., 2007; Linan et al., 2011), that entrepreneurial intentions can have a positive relationship with an individual's attitudes regarding entrepreneurship and the self-efficacy for entrepreneurship. This is consistent with a more recent study (Fayolle and Gailly, 2013). The sample in their study comprised of Masters students from management courses in France. These samples may include individuals who already have their own new or established business ventures together with individuals that are yet to start their careers. Looking at the combination of the participants' sample, the knowledge about how their entrepreneurial intention was nurtured to encourage them to become business owners may not be known. This study employed a different sample by using senior year undergraduate students that are yet to choose their future careers in order to measure their formation of entrepreneurial intentions.

Furthermore, analyses in this study revealed the strength of perceived desirability for entrepreneurship among Nigerian University students more than entrepreneurial self-efficacy from exposure to entrepreneurship education. The strength of developing entrepreneurial self-efficacy through entrepreneurship education has been underlined in entrepreneurship literature (Zhao et al., 2005; Karimi et al., 2016). This study revealed that perceived desirability for entrepreneurship play a major role among Nigerian University students than entrepreneurial self-efficacy through exposure to entrepreneurship education. In fact, the result showed that developing perceived desirability for entrepreneurship alone could be sufficient in forming students' entrepreneurial intentions in the Nigerian context. Hence, a different result has been revealed from this study that depending on the setting, the relationship between entrepreneurship education and entrepreneurial intentions through entrepreneurial self-efficacy may not prove to be a promising process than through perceived desirability for entrepreneurship.

This finding theoretically implies that within a developing country context, perceived desirability for entrepreneurship could serve as an important mediating role in the relationship between entrepreneurship education and entrepreneurial intentions compared to entrepreneurial self-efficacy plays. At a broader theoretical level, this study expands on the attitudinal perspective in entrepreneurial intention research. In a recent study, Karimi et al (2016) suggested that while forming entrepreneurial intentions, going through mandatory entrepreneurship education programs in developing countries could positively impact on an individual's self-efficacy or perceived behavioral control. This study argues that the development of this cognitive feature self-efficacy can be regarded as valid but not adequate, because while self-efficacy is being developed, raising the attitudes to result to a positive attraction towards entrepreneurship career

is necessary for the individual in order to condition the mindset towards developing the required competence for self-efficacy. Based on the findings which illustrate the importance of attitudes, it is argued that there is an element more than entrepreneurial competence and capabilities which is whether the individual has been attracted positively to the idea of going into entrepreneurship as a career instead of developing largely the capabilities for the career. This finding also derived several practical implications.

5.3.2 Theoretical Implications for Entrepreneurship Education

The results of this thesis have theoretical implications for entrepreneurship education research. The study provides more empirical evidence that entrepreneurial learning can be obtained from entrepreneurship education that could impact on entrepreneurial intentions. The entrepreneurial learning component studied in this thesis reveal that students were exposed to several benefits such as the knowledge of an entrepreneur's attitudes and motivations, how to go about starting a new business with the required steps, develop one's social skills and opportunity recognition ability. In addition, it provides evidence that the entrepreneurial learning component can develop students' perceived desirability for entrepreneurship and their entrepreneurial self-efficacy.

Previous studies identified various types of benefits can be derived from entrepreneurship education that can have significant impact on attitudes perceptions and entrepreneurial intentions, such as inspiration, proactiveness, risk-taking, and self-efficacy (Souitaris et al., 2007; Sanchez, 2013; Mustapha, 2016). In observation, the entrepreneurial learning component in the findings of this study has provided the capacity to integrate and embed such benefits within the entrepreneurship education program in the form of entrepreneurial knowledge, attitude, practical

skills, social, and opportunity recognition skills which have not been examined to test their relationship as a component with entrepreneurial intentions. The study provides empirical evidence that entrepreneurial learning can be benefited from entrepreneurship education.

Furthermore, the positive relationship as found between entrepreneurial learning in entrepreneurship education and the development of perceived desirability for entrepreneurship and entrepreneurial self-efficacy could be evident from the above discussion. The findings that perceived desirability for entrepreneurship was stronger from exposure to the entrepreneurial learning features imply that the entrepreneurship education program is successful in raising their perceived desirability for entrepreneurship, there by having a positive impact. This finding has key practical implications for entrepreneurship education that would be discussed in the next section.

In this sense, the findings from this study suggests an entrepreneurship education program framework that could be **human attitude-centered** in order to foster students' entrepreneurial intentions with a more focus on developing their perceived desirability for entrepreneurship.

5.3.3 Practical Implications of the Study

In regards to practice, this study developed key insight and guideline for entrepreneurship program educators in Nigeria in terms of design. The major practical implication for educators is that although the right attitude and competence that may increase the probability for subsequently starting a new business is necessary to be nurtured in entrepreneurship education program (Linan et al., 2011), it is the attitude that plays the major role in increasing the students' chances of subsequently attempting to embark on becoming self-employed through entrepreneurship. The implication here is that if the target of the existing entrepreneurship

education program is to add to the number of entrepreneurs emanating from Universities as pointed out by the Nigerian government (National Universities Commission, 2011), then educators have to develop entrepreneurship programs that emphasize raising the perceived desirability for entrepreneurship of students that address the required entrepreneurial attitudes alongside entrepreneurial self-efficacy. It becomes vital to reflect these principles within the entrepreneurship education framework in Nigerian universities.

Since the results of this study showed that perceived desirability for entrepreneurship was the strongest element to be positively impacted on and in influencing entrepreneurial intentions, this element can be fostered effectively through entrepreneurship education programs while nurturing the entrepreneurial self-efficacy. It can be suggested that educators should provide training within the knowledge and skills provided that can serve as a means to inspire students in an entrepreneurial career.

If we want to stimulate in students the ability to become attracted and think positively of entrepreneurship as a viable career, there is a need for educators to provide courses that surround information for students to obtain knowledge about entrepreneurship. The aim of such a program is encompassed within an awareness education creation program as categorized by (Linan, 2007). Course contents reflecting awareness elements would be very important to be included within a program. This can include providing information on key roles played by seasoned entrepreneurs in the socio-economic development of Nigeria as the role that seasoned entrepreneurs like Dangote Group (Akindayo and Uche, 2016) play in job creation in Nigeria

and improving lives of individuals. This would reveal to the students how they can give value to entrepreneurship. This would also encourage students to think big as individuals in terms of how

Table 5.1 Entrepreneurial concepts for Nigerian Entrepreneurship Program

HUMAN ATTITUDE CENTERED PROGRAM	
❖ **Source of Inspiration for students**	❖ **Exemplary Value Course Contents** ▪ ▪ Key Nigerian entrepreneurs ♦ Roles in society ♦ Abilities and skill
❖ **Retain Intention in students throughout University years**	❖ **Experiential Learning (Optional Extra Semester)** ▪ Students' new venture
Pre-post measurement of program impact	

they can self realize themselves, become recognized in the society, and aim at attaining financial success just as these seasoned entrepreneurs. The introduction of these concepts would increase the start-up intentions of students in Nigerian Universities.

In addition, the finding that the control group students had lower entrepreneurial intentions at the end of the entrepreneurship program (see table 4.17) suggests that there could be lower interest in entrepreneurship at the end of the year, there by having implications for the program. It implies that there is a need to consider expanding the Nigerian University entrepreneurship programs with an extra semester course such as GST321 in order to retain the intention in students throughout their studies (Kwong and Thompson, 2016). In this case, this course could

be made optional for students in order to capitalize on the increased perceived desirability and entrepreneurial self-efficacy found in this study. In this case, the second option of the category of entrepreneurship programs such as Linan (2007) *education for entrepreneurship* (section 2.4.2) may be explored which might be titled experiential learning. This may include setting up of new business ventures by groups of students that could participate in either regional, national or international competitions.

More so, given the finding that the program does not create a large significant impact on the element of entrepreneurial self efficacy implies that entrepreneurship education programs need to provide further triggers beyond the extra semester earlier suggested in order not to loose the increased interest (perceived desirability) on the treatment group students and further impact their entrepreneurial self efficacy (see table 4.19).

The findings also showed that computer science students had the higher entrepreneurial intentions, and it can be suggested that entrepreneurship for the computer science faculty can be encouraged within entrepreneurship education programs in Nigeria by developing programs that could be specific for computer science students. This can be achieved by embedding the key entrepreneurial concepts described above within the computing field in delivering entrepreneurship programs. For instance, prominent owners of technology-based businesses "Konga" and "Jumia" were founded by young entrepreneurs in Nigeria (David-West, 2016). Therefore, in conveying the entrepreneurial concepts of these key entrepreneurial figures to students in entrepreneurship programs, it would be ideal and important to focus on the stories of such firms within entrepreneurship course contents for computer science students in order to

encourage them to develop positive attraction towards entrepreneurship by making use of their technological knowledge and advantage.

In this regard, it is clear that the existing entrepreneurship education program that is regarded as the available offer in Nigerian Universities may be insufficient for instilling a level of sustained entrepreneurial intention in their students. They focus heavily on developing the business plan without grounding the students in developing the right entrepreneurial attitudes. Although, the curriculum could be said to include some course contents, "the Nigerian Business environment", this study has explained some approaches that would improve the implementation of the design of these initiatives of entrepreneurship education.

In this sense, since perceived desirability for entrepreneurship is vital for encapsulating entrepreneurial attitudes, it can be suggested that it should be measured. A university that may need to measure the impact of their entrepreneurship education program should not only focus on how satisfied the students were on the program as a whole, or what competence have been gained in terms of practice, but also on how the program have inspired the students to become attracted to entrepreneurship. Here, a measure of a before and after participation in entrepreneurship program would capture such information. This form of measurement could be regarded as an important practical suggestion.

Additionally, the findings of this study suggest that policy makers should recognize the importance of students' perceptions of attitudes and skills for entrepreneurship, more especially positive attitudes towards entrepreneurship. The finding that the control group revealed either an

unchanged or lower entrepreneurial intentions, perceived desirability for entrepreneurship and entrepreneurial self-efficacy suggest that policy makers could consider to embark on rigorous initiatives that would keep the required level of entrepreneurial awareness and self-employment in the mindsets of students may yield positive attitudes and increase the number of potential entrepreneurs in the society. This is necessary while considering managing budgets and resources. Also, the adoption of measurements in a before and after participation approach would not only improve on the entrepreneurship education programs, but also develop key insight for these policy makers on the perception of undergraduates who are considered future entrepreneurs among Nigerian youths.

CHAPTER 6 CONCLUSIONS

Introduction

This chapter provides the concluding comments for this research and also examines the limitations. Numbers of areas for future research are also included in this chapter and finally, a discussion of the contribution that this study makes to the field of entrepreneurship education research and entrepreneurial intentions.

6.1 Conclusions

This thesis aimed to develop an entrepreneurship education framework by examining the impact of entrepreneurship education on students' entrepreneurial intentions and identifying the factors that influence their intentions. To address this aim, a conceptual framework was developed around the relationship between entrepreneurship education and entrepreneurial intentions using key entrepreneurial intention-based models. A quantitative study using a pre-post test control group research design helped to empirically test this framework and examine the impact of a semester long entrepreneurship education program and reveal the most influencing factors on students' entrepreneurial intentions.

The statistical analyses of this study suggest that participating in entrepreneurship education programs has positive impacts for Nigerian University students. Students that participated in entrepreneurship education demonstrated higher entrepreneurial intentions, perceived desirability for entrepreneurship and entrepreneurial self-efficacy compared to non-participating students.

The control group has been employed to verify that such changes in entrepreneurial intentions take place in only one specific group (students who have gone through entrepreneurship education) and not in another group (students who have not been exposed to this program). Results of this study showed that at phase 1, there was no significant difference between the two groups in students' entrepreneurial intentions and its antecedents. At phase 2, the treatment group students showed a difference in the intentions while statistical results for the control group indicate that such difference have not occurred in this group. Specifically, it was revealed that the positive impact for the treatment group was highest on perceived desirability for entrepreneurship than entrepreneurial self-efficacy. In particular, it was demonstrated that participating in entrepreneurship education revealed higher entrepreneurial learning benefits in terms of the knowledge and skills gained from the program that is not felt in the control group.

Furthermore, numerous factors have been outlined in the literature to influence the development of students' decision to embark on entrepreneurship as a career. These factors can have varying levels of influence on the individual's entrepreneurial intentions. For example, it can be from one's immediate social environment or personal individual factors, either of which can have a significant or non-significant influence. Therefore, the statistical results in this study indicate that perceived desirability for entrepreneurship and entrepreneurial self-efficacy were the two most important factors that significantly influenced students' entrepreneurial intentions, with perceived desirability for entrepreneurship revealing the highest significance. This infers that students' perception of a positive attitude towards entrepreneurship was more important than their entrepreneurial self-confidence when intending to choose entrepreneurship as a future

career. It was also revealed that students' course of study was the only significant demographic factor for explaining entrepreneurial intentions. Specifically, students from the computer science field had higher entrepreneurial intentions than students in the microbiology field. The results indicate that the students as future computer scientists have a great deal in deciding to embark on entrepreneurship and have overruled the importance of their gender, age, having close entrepreneurs, family occupation and income level.

It should be considered that the results of this study needs to be viewed from the perspective that it is a compulsory entrepreneurship education that prepare students for self-employment after graduation in Nigeria. For self-employment to occur, an actual entrepreneurial behavior needs to take place with the occurrence of an intention to perform the act. In this case, it is the intention grounded within intention models that are important. Findings in this study do not mean that the experience of the actual creation of new businesses have been felt by students, but what is revealed is that going through entrepreneurship education has impacted positively on students in terms of the formation of their entrepreneurial intention. The students showed positive changes in their perceived desirability and entrepreneurial self-efficacy, and as well positive link between these variables and their entrepreneurial intentions. Overall, there is evidence that entrepreneurial behavior has been stimulated in Nigerian University students and could possibly occur in the future. Only a longitudinal that can follow up into students' subsequent careers in future can substantially provide evidence on their subsequent entrepreneurial behavior and that is not possible to conduct within the boundaries of this PHD thesis. Also, a pilot test of the implementation of the suggested guidelines for entrepreneurship education in Nigerian Universities provided in this study could be another plausible approach which is also beyond the

boundaries of this thesis to conduct. However, what the findings of this study do indicate is that the entrepreneurship education in Nigerian Universities can have positive impact in the development of entrepreneurial intentions and its key antecedents that could in future become an encouraging factor for going into entrepreneurship by the students. Based on the findings derived from this study, suggestions have been made that could create modifications within the existing Nigerian entrepreneurship program by reinforcing the identified factors in order to improve entrepreneurial intentions of students.

6.2 Limitations

The researcher has considered that several questions, procedures and outcomes from this research that remain are yet to be addressed require new perspectives in entrepreneurship education research. This research would not be able to address all the issues, however this section presents certain limitations and their discussion from the view of the researcher.

Time of Research

In relation to time, as discussed, this study measured the development of entrepreneurial intentions and its antecedents using before and after approach in relation to entrepreneurship education. But the study did not measure how stable are these cognitions over a certain period for actual behavior. Krueger et al (2000) and Linan et al (2011) stated that the time lag between intentions and actions might take a long while. This gap can only be filled through conducting longitudinal studies that can track whether students with higher entrepreneurial intentions were able to translate their intention to entrepreneurial behavior. This is beyond the scope of this PHD thesis.

Using Only Quantitative Sample

This study measured students' entrepreneurial career choice quantitatively. Quantitative studies can only measure what causes an effect. Though it is understood that qualitative studies can provide further explanations into the cause and effect relationship in a sample. However, this study is confident with the validity of the results, as issues related to validity of quasi experiments have been fully addressed in section 3.7.1 in chapter 3 of this thesis. In addition, it focused on supporting empirical evidence on impact of entrepreneurship education in a Nigerian setting. In future, qualitative studies using semi-structured interviews might also be conducted to understand how students developed into choosing an entrepreneurial career (Creswell, 2014). In addition, entrepreneurship educators could also be interviewed to understand how the Nigerian entrepreneurship curriculum is delivered beyond University's handbook and brochures.

Lack of Probability Sampling

This study used non-probability sampling technique in obtaining the sample of Undergraduate students in this study. It is acknowledged that probability sampling may be the most preferred sampling strategy than non-probability for quantitative studies in making generalizations. It also allows the study of larger sample than non-probability sampling (Creswell, 2014). However, with a probability strategy, sampling based on population of all Universities in Nigeria, and other contextual limitations, it may not be realistic to use probability sampling in this thesis. See section 3.2 in chapter 3 of this thesis for a full discussion of participants' selection. This research aimed to obtain specific information relating to entrepreneurial intentions before and after an intervention from specific undergraduate students group that non-probability sampling would be useful. This strategy could make it possible to generalize the results of entrepreneurial intentions

to the population of computer science and microbiology students within these Universities studied. As the program studied in the thesis is a compulsory prototype curriculum for Nigerian Universities, the context of the quantitative study could be generalized to other private Universities in Nigeria. Moreover, using nonprobability sampling is used in entrepreneurship education research (Cheng et al., 2009; Fatoki, 2014). In this regard, this study could be replicated in other Private Universities in Nigeria.

Sample Group

The selection of control group in this study was not random. It is practically challenging within such impact studies to select a very equivalent group to match as control (Fayolle and Gailly, 2013). The fact that the entrepreneurship curriculum was compulsory made it difficult to establish an appropriate control sample within the same institution and year group. To compensate for this and rule out bias, the research design was considered quasi experimental than a true experiment. It was also considered that since the curriculum was compulsory nationally, locating Universities that have very close geographical proximity and similar setting with the treatment group University would be a suitable approach to obtain a control group. The similarities of the demographics in this study give evidence and support that similar set of the students enroll in Nigerian Private Universities in terms of their age, gender, parents back ground, and family incomes (Adetunji et al., 2016). In addition, all Universities in the sample were private Universities. In this sense, the confidence in validity of the results of this study is not restricted (Sadish et al., 2002). Quasi experiments are better than cross-sectional studies in addressing issues related to internal validity. Overall, sampling students from other Universities contribute to the external validity of the findings.

Using Non-Matched Students

Another limitation is the use non-matched students, as it was believed that students within the class would not have a significant difference in their participation in entrepreneurship programs. The matched individuals would have revealed entrepreneurial intentions of each student at the end of the program. To pre-empt that, it was considered that the objective of the study was to measure students' entrepreneurial intentions from the overall group level instead of the item or subject level. The study also employed the methodology in a trend longitudinal approach that shows not only change or improvement in a behavior, but the characteristics of a sample from the same population that may change overtime (Sadish et al., 2002). Hence, students' demographic information was obtained at both the first and second phase of the study in order to obtain the characteristics of sample as they may change over time. In addition, since these set of students in a particular discipline and year group passed through the same enrollment period from their first year, had the same lecturers and similar experiences all through till their third year, they would be likely to obtain similar offerings from the entrepreneurship program, therefore having the same impact as a group. However, to measure students' level entrepreneurial intentions, future studies might want to obtain data from the same student before and after an entrepreneurship program.

6.3 Further Research

The conclusions reached from this study and the limitations identified above lead to variety of avenues for future research. This is because some findings discussed earlier in this section need to be confirmed, while some have developed significant results to improve the area of interest in

entrepreneurial intentions and entrepreneurship education research. Some of the areas of interest are discussed below.

This research was conducted across three Nigerian Universities. Based on the sampling strategy adopted, the findings could be generalized to students within these Universities. However, as there are over forty private Universities in Nigeria (National Universities Commission, 2016), it may be interesting to replicate this study in different Universities in order to investigate if the findings of this research are consistent.

This study measured students' entrepreneurial intentions and not the real behavior. At some point in future after graduation, some of the students might either become organizationally employed or some self-employed. Either of the careers chosen may require some level of entrepreneurial attitudes or skills. It would be interesting to see the number of students that eventually become entrepreneurs. This can be achieved with longitudinal studies to further test entrepreneurial intentions model.

One finding developed in the context of this study is that among Nigerian Universities, their perceived attraction for entrepreneurship is strong to result in entrepreneurial intentions. It may be interesting to find out why is perceived desirability for entrepreneurship strong among Nigerian University students. It has been argued that for entrepreneurial intentions to develop, it is essential that perceived desirability and entrepreneurial self-efficacy are strong (Ajzen, 1991; Mueller, 2011). In addition, it may be worthwhile to consider piloting the implementation of the practical approach suggested in this study to further test if the the program influences further the

entrepreneurial self-efficacy element among Nigerian University students that at the moment does not make large significant difference compared to perceived desirability.

Still on the strength of perceived desirability for entrepreneurship, a positive interaction between this construct and entrepreneurial self-efficacy may raise several questions about the moderating effects prevailing in the entrepreneurial intention model (A high correlation was developed between these constructs in table 4.18 and 4.20). Douglas and Fizisimmons (2011) and, Seiger and Monsen (2015) argued that undergraduate students could be described as individuals with a promotion focus because they engage in searching opportunities, finding solutions, and are likely to choose their future careers. In this case, Nigerian students in this study might have positive interaction between their cognitive perceptions due to a promotion focus. Therefore, it may be worthwhile for future studies to examine empirically the extent to which perceived desirability for entrepreneurship moderates the relationship between entrepreneurial self-efficacy and students' entrepreneurial intentions.

Another interesting area of research would be to investigate quantitatively the link between each entrepreneurial component identified in the entrepreneurship education framework and their link with the antecedents of entrepreneurial intentions. This may entail developing further the entrepreneurial learning component (Souitaris et al., 2007). For example, some factors could be included such as, participating in entrepreneurship program has increased my understanding of (1) why entrepreneurs act, (2) the value attached to entrepreneurship, (3) an entrepreneur's unique character.

Findings from this study in regards to the insignificance of family income, parents' occupational status on students' entrepreneurial intentions may lead to questions related to entrepreneurial identity. This way, students that intend to embark on self-employment might have been driven by the need to create their own status irrespective of their family background; in the form of taking up responsibilities, building their own project and judgments. These are regarded as aspects of constructing students' entrepreneurial identity. Donnellon et al (2014) argued that start up creation programs are avenues for stimulating the construction of students' entrepreneurial identity just like the acquisition of knowledge and skills. Therefore, investigating the extent to which students in Nigerian Universities create their entrepreneurial identity would be interesting for future research.

Furthermore, the lower levels of entrepreneurial intentions for the control group students at the end of the program could lead other studies in incorporating a level of sustained intentions as a new element within the existing model of this study. Kwong and Thompson (2016) emphasized the need to maintain the intention of entrepreneurship in students beyond the regular entrepreneurship education programs. Therefore, it may be exciting for further studies to find out how University students with higher entrepreneurial intentions maintain their enthusiasm for entrepreneurship within the university environment or beyond graduation.

6.4 Contribution

The results of this study bring important contribution to the literature on examining entrepreneurship education and the determinants of students' entrepreneurial intentions in a developing country context in a number of ways.

Firstly, it has contributed to the theory of planned behavior by testing a conceptual framework and confirming the relationship between entrepreneurial intentions and its antecedents and by examining the impact of an exogenous variable (entrepreneurship education) on individual cognitive perceptions and intentions towards a particular behavior (self-employment) in a Nigerian context. It examines entrepreneurial intentions of undergraduate students who have participated in entrepreneurship education programs. This study provides more insight into the entrepreneurial behavior of students- an area that has little or no attention in Nigeria since its establishment in 2006/2007 academic session. The study is one of the pioneer examination of the existing national entrepreneurship programs. If as the National Universities Commission in Nigeria (NUC, 2011) expect that graduates from all Nigerian Universities would think of self-employment as an alternative career option to employable jobs upon receiving the compulsory entrepreneurship training, it is important to know whether the entrepreneurship education program has made an impact or not on the students' intention to embark on entrepreneurship as a career choice. The results of this study filled this gap by providing more evidence of the applicability of the theory of planned behavior as a guiding framework for assessing the impact of entrepreneurship education programs. Hence, this study confirms that the program has made a positive impact on students' entrepreneurial intentions and it antecedents - perceived desirability for entrepreneurship and entrepreneurial self-efficacy.

Secondly, this study contributed to the assessment of the impact of entrepreneurship education on solely science-based University students in a developing country, Nigeria. Little attention has been paid to students from science background in prior studies. In majority of Universities, science based disciplines have considered the inclusion of entrepreneurship education as an

important program for students. Studies have also shown that science students develop higher entrepreneurial intentions. Prior studies on business related students have become saturated in entrepreneurship education research because these sets of students have developed some form of prior entrepreneurial inclination during their course of studies. This calls for studying impact of these programs on non-business students. In Nigeria particularly, this study particularly through the pre-tests and post-tests with a control group filled this gap by providing evidence that entrepreneurship education had a positive impact on computer science students, and they can also have higher entrepreneurial intentions.

Thirdly, in terms of methodology, this study has used a pre-test post-test quasi experimental control group design to undertake this research in a developing country setting. This form of design has been used for only a few entrepreneurship education impact studies in the context of developed countries. Majority of the research in this area employ post-test measurements of the impact of entrepreneurship programs, that is the use of cross sectional studies. These forms of measurements do not provide a clear assessment of the impact of such programs. In terms of the approach of the quasi-experiment, only a few studies have used control groups in measuring the impact of entrepreneurship education programs. Recently, a meta-analysis of Rideout and Gray (2013) and Nabi et al (2017) concluded that the few studies in entrepreneurship education employing control groups tend to indicate rigor in the research. Similar to developed countries, much of the research in the Nigerian context to date has also consisted of either a cross sectional or descriptive studies – there is no research that used a combination of a research design employing a pre-test post-test measurement. This study has contributed by filling these gaps by employing pretest-post-test control group research design in assessing the impact of

entrepreneurship programs in Nigeria. The use of the control group in this study has made this research one of the pioneer in entrepreneurship education research in the Nigerian, thereby adding to the quality of the thesis.

Fourthly, this study contributes to the debate on the influential elements for students' entrepreneurial intention by showing that the most important factor is the perceived desirability for entrepreneurship followed entrepreneurial self-efficacy. It also revealed that students' course of study was the only important demographic factor. Previous entrepreneurial intention research has underscored that both perceived desirability for entrepreneurship and entrepreneurial self-efficacy are equally necessary for entrepreneurial intention to occur, and that several individuals' demographic factors create good levels of influence on this behavior. This study supports prior claims in the literature by revealing that although the two antecedents are very important, but the element perceived desirability for entrepreneurship proves to be the most important factor during the formation of students' entrepreneurial intentions. In this stream, the influence of only students' course of study among other demographic factors improves on the claim by Krueger et al (2000) that the series of demographic factors provide limited explanatory power for an individual's entrepreneurial intentions compare to cognitive factors as found in this study. These findings obviously give more clarity in the field of entrepreneurship intention research on factors that aid in developing students' personal decision for new venture creation could vary according to different contexts.

Fifthly, results from this study add to the existing body of knowledge regarding the benefits of participating in entrepreneurship education programs by revealing the positive impact that

entrepreneurial learning has on perceived desirability for entrepreneurship and entrepreneurial self-efficacy. Much of the research on the benefits gained from these programs includes entrepreneurial knowledge, attitude, practical skills, social, and opportunity recognition skills in which most of them have not been examined in terms of their relationship with perceived desirability and entrepreneurial self efficacy**.** This study has filled these gaps by demonstrating the capacity of the entrepreneurial learning component signified as a whole for the different benefits identified in previous studies and showing that they have positive impacts on students' cognitive perceptions.

Sixthly and finally, from a practical point of view, this study provides strong contribution related to modified guidelines in a framework for the improvement of the design of entrepreneurship education programs, especially that these programs are being offered across all Nigerian Universities. The ten year long existing entrepreneurship education framework used across Nigerian Universities have not been studied to reveal its effectiveness in practice. These modifications are based on **human attitude** concepts within entrepreneurship education programs that are important to aid reinforcing the most crucial factors that influence students' entrepreneurial intentions in the Nigerian context found in this study. This framework can be practically considered when developing students' entrepreneurial intentions. Much of the research focus mostly on varying educational components for delivering programs at varying stages of entrepreneurship (Yatu, 2016). Mwasalwiba (2010) proposed that there is a need for more studies to revisit the development of entrepreneurship education programs in order to achieve its purpose. The practical suggestions provided in the entrepreneurship education

framework are for entrepreneurship educators to consider to develop higher entrepreneurial intentions of students.

It is hoped that through this research, contribution has been made concerning evidence for the impact of entrepreneurship education and entrepreneurial intention research.

REFERENCES

Adetunji, A.T., Adetunji, M.A.V. and Oyelude, M.O.O., 2016. Contemporary Problems in Nigeria Private University That Affects Quality. International Journal of Recent Advances in Multidisciplina Research, 3(10), pp.1874-1879.

Ajayi, J.O, 2014. ASUU Strikes and Academic Performance of Students in Ekiti State University Ado-Ekiti. *International Journal of Management and Business Research*, *4*(1), pp.19-34.

Ajzen, I., 1991. The theory of planned behavior. *Organizational behavior and human decision processes*, *50*(2), pp.179-211.

Ajzen, I., 2002. Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of applied social psychology*, *32*(4), pp.665-683.

Akhuemonkhan, I.A., Raimi, L. and Sofoluwe, A.O., 2013. Entrepreneurship education and employment stimulation in Nigeria. *Journal of Studies in Social Sciences*, *3*(1).

Akinyoade, A. and Uche, C.U., 2016. Dangote cement: an African success story?. *ASC working paper*.

Akpan, C. and Etor, C., 2013. University lecturers' perception of entrepreneurship education as an empowerment strategy for graduate self-employment in South-South Nigeria. *International Journal of Asian Social Science*, *3*(5), pp.1180-1195.

Altinay, L., Madanoglu, M., Daniele, R. and Lashley, C., 2012. The influence of family tradition and psychological traits on entrepreneurial intention. *International Journal of Hospitality Management*, *31*(2), pp.489-499.

Ang, S.H. and Hong, D.G., 2000. Entrepreneurial spirit among east Asian Chinese. *Thunderbird International Business Review*, *42*(3), pp.285-309.

Autio, E., H. Keeley, R., Klofsten, M., GC Parker, G. and Hay, M., 2001. Entrepreneurial intent among students in Scandinavia and in the USA. *Enterprise and Innovation Management Studies*, *2*(2), pp.145-160.

Bandura, A., 1986. The explanatory and predictive scope of self-efficacy theory. *Journal of social and clinical psychology*, *4*(3), pp.359-373.

Bandura, A., 1997. *Self-efficacy: The exercise of control*. Macmillan.

Bird, B., 1988. Implementing entrepreneurial ideas: The case for intention. *Academy of management Review*, *13*(3), pp.442-453.

Braithwaite, V.A., Scott, W.A., Robinson, J.P., Shaver, P.R. and Wrightsman, L.S., 1991. Measures of personality and social psychological attitudes. *Measures of personality and social psychological attitudes*, *1*.

Brockhaus, R.H., 1980. Risk taking propensity of entrepreneurs. *Academy of management Journal*, *23*(3), pp.509-520.

Bosma, N., Hessels, J., Schutjens, V., Van Praag, M. and Verheul, I., 2012. Entrepreneurship and role models. *Journal of Economic Psychology*, *33*(2), pp.410-424.

Boyd, N.G. and Vozikis, G.S., 1994. The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship theory and practice*, *18*, pp.63-63.

Bygrave, W. and Minniti, M., 2000. The social dynamics of entrepreneurship. *Entrepreneurship: theory and practice*, *24*(3), pp.25-25.

Caliendo, M., Fossen, F.M. and Kritikos, A.S., 2009. Risk attitudes of nascent entrepreneurs–new evidence from an experimentally validated survey. *Small Business Economics*, *32*(2), pp.153-167.

Carland, H., Carland, J.W., Hoy, F. and Carland, J.A.C., 2002. Who is an entrepreneur? Is a question worth asking. *Entrepreneurship: Critical perspectives on business and management*, *2*(178), pp.47-67.

Carter, N.M., Gartner, W.B., Shaver, K.G. and Gatewood, E.J., 2003. The career reasons of nascent entrepreneurs. *Journal of Business Venturing*, *18*(1), pp.13-39.

Chandler, G.N. and Lyon, D.W., 2001.Entrepreneurial Teams in New Ventures: Composition, Turnover and Performance. In *Academy of Management Proceedings* (Vol. 2001, No. 1, pp. A1-A6). Academy of Management.

Chell, E. and Baines, S., 2000. Networking, entrepreneurship and microbusiness behaviour. *Entrepreneurship & regional development*, *12*(3), pp.195-215.

Chen, C.C., Greene, P.G. and Crick, A., 1998. Does entrepreneurial self-efficacy distinguish entrepreneurs from Managers? *Journal of business venturing*, *13*(4), pp.295-316.

Cheng, M.Y, Sei Chan, W. and Mahmood, A., 2009. The effectiveness of entrepreneurship education in Malaysia. *Education+ Training*, *51*(7), pp.555-566.

Chukwuma, E. and Ogbeide, D.E.O., 2017. Impact of entrepreneurial education on entrepreneurial intention among a sample of Nigerian students. *International Journal of Social Sciences and Humanities Review*, *7*(1).

Christensen, L.B., Johnson, B., Turner, L.A. and Christensen, L.B., 2011. Research methods, design, and analysis. 3rd edition. Pearson

Collis, J. and Hussey, R., 2011. *Business research: A practical guide for undergraduate and postgraduate students*. Palgrave macmillan.

Cook, T.D. and Campbell, D.T., 1979. Design and analysis of quasi-experiments for field settings. *Skokie, IL: Rand McNally*.

Creswell, J.W., 2014. *A concise introduction to mixed methods research*. Sage Publications.

Cromie, S., 2000. Assessing entrepreneurial inclinations: Some approaches and empirical evidence. *European journal of work and organizational psychology*, *9*(1), pp.7-30.

Dabic, M., Daim, T., Bayraktaroglu, E., Novak, I. and Basic, M., 2012. Exploring gender differences in attitudes of university students towards entrepreneurship: an international survey. *International Journal of Gender and Entrepreneurship*, *4*(3), pp.316-336.

Dahl, G.B. and Lochner, L., 2012. The impact of family income on child achievement: Evidence from the earned income tax credit. *The American Economic Review*, *102*(5), pp.1927-1956.

David-West, O., 2016. E-Commerce Management in Emerging Markets. *Encyclopedia of E-Commerce Development, Implementation, and Management*, *1*, p.200.

Donnellon, A., Ollila, S. and Middleton, K.W., 2014. Constructing entrepreneurial identity in entrepreneurship education. *The International Journal of Management Education*, *12*(3), pp.490-499.

Douglas, E.J. and Shepherd, D.A., 2002. Self-employment as a career choice: Attitudes, entrepreneurial intentions, and utility maximization. *Entrepreneurship theory and practice*, *26*(3), pp.81-90.

Draycott, M. and Rae, D., 2011. Enterprise education in schools and the role of competency frameworks. *International Journal of Entrepreneurial Behavior & Research*, *17*(2), pp.127-145.

Dyer Jr, W.G., 1994. Toward a theory of entrepreneurial careers. *Entrepreneurship: Theory and Practice*, *19*(2), pp.7-22.

Engle, R.L., Dimitriadi, N., Gavidia, J.V., Schlaegel, C., Delanoe, S., Alvarado, I., He, X., Buame, S. and Wolff, B., 2010. Entrepreneurial intent: A twelve-country evaluation of Ajzen's model of planned behavior. *International Journal of Entrepreneurial Behavior & Research*, *16*(1), pp.35-57.

Fatoki, O., 2014. Parental and Gender Effects on the Entrepreneurial Intention of University Students in South Africa. *Mediterranean Journal of Social Sciences*, *5*(7), p.157.

Fayolle, A. and Gailly, B., 2013. The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. *Journal of Small Business Management*, *53*(1), pp.75-93.

Fayolle, A., Gailly, B. and Lassas-Clerc, N., 2006. Assessing the impact of entrepreneurship education programmes: a new methodology. *Journal of European industrial training*, *30*(9), pp.701-720.

Franco, M., Haase, H. and Lautenschläger, A., 2010. Students' entrepreneurial intentions: an inter-regional comparison. *Education+ Training*, *52*(4), pp.260-275.

Gabadeen, W.O. and Raimi, L., 2012. Management of entrepreneurship education in Nigerian higher institutions: Issues, challenges and way forward. *Abuja International Journal Of Education And Management Sciences (ABIJEMS)*, *2*, pp.1-26.

Gartner, W.B., 1989. Some suggestions for research on entrepreneurial traits and characteristics. *Entrepreneurship theory and practice*, *14*(1), pp.27-37.

Gartner, W.B., 2004. Achieving "critical mess" in entrepreneurship scholarship. In *Advances in Entrepreneurship, Firm Emergence and Growth*(pp. 199-216). Emerald Group Publishing Limited.

Gerba, T.D., 2012. Impact of entrepreneurship education on entrepreneurial intentions of business and engineering students in Ethiopia. *African Journal of Economic and Management Studies*, *3*(2), pp.258-277.

Good, T.L. and Brophy, J.E., 1990. *Educational psychology: A realistic approach*. Longman/Addison Wesley Longman.

Guba, E.G. and Lincoln, Y.S., 1994. Competing paradigms in qualitative research. *Handbook of qualitative research*, *2*(163-194), p.105.

Gurel, E., Altinay, L. and Daniele, R., 2010. Tourism students' entrepreneurial intentions. *Annals of Tourism Research*, *37*(3), pp.646-669.

Hair, J.F., Money, A.H., Samouel, P. and Page, M., 2007. Research Methods for Business. *Education+ Training*, *49*(4), pp.336-337.

Hansemark, O.C., 1998. The effects of an entrepreneurship programme on need for achievement and locus of control of reinforcement. *International Journal of Entrepreneurial Behavior & Research*, *4*(1), pp.28-50.

Heinonen, J. and Poikkijoki, S.A., 2006. An entrepreneurial-directed approach to entrepreneurship education: mission impossible?. *Journal of management development*, *25*(1), pp.80-94.

Henry, C., Hill, F. and Leitch, C., 2005. Entrepreneurship education and training: can entrepreneurship be taught? Part I. *Education+ Training*, *47*(2), pp.98-111.

Henry, C., Hill, F. and Leitch, C., 2005. Entrepreneurship education and training: can entrepreneurship be taught? Part II. *Education+ Training*, *47*(3), pp.158-169.

Herrmann, K., Hannon, P., Cox, J., Ternouth, P. and Crowley, T., 2008. *Developing entrepreneurial graduates: putting entrepreneurship at the centre of higher education* (p. 36). London: NESTA.

Jesselyn Co, M. and Mitchell, B., 2006. Entrepreneurship education in South Africa: a nationwide survey. *Education+ Training*, *48*(5), pp.348-359.

Johannisson, B., 1991. University training for entrepreneurship: Swedish approaches. *Entrepreneurship & Regional Development*, *3*(1), pp.67-82.

Jones, C. and English, J., 2004. A contemporary approach to entrepreneurship education. *Education+ training*, *46*(8/9), pp.416-423.

Karimi, S., Biemans, H.J., Lans, T., Chizari, M. and Mulder, M., 2016. The impact of entrepreneurship education: A study of Iranian students' entrepreneurial intentions and opportunity identification. *Journal of Small Business Management*, *54*(1), pp.187-209.

Krathwohl, D.R., 2009. *Methods of educational and social science research: The logic of methods*. Waveland Press.

Katz, H., 2001. The relationship of intrinsic motivation, cognitive style and tolerance of ambiguity and creativity in scientists.

Katz, J.A., 2003. The chronology and intellectual trajectory of American entrepreneurship education: 1876–1999. *Journal of business venturing*, *18*(2), pp.283-300.

Kirby, D.A., 2004. Entrepreneurship education: can business schools meet the challenge?. *Education+ training*, *46*(8/9), pp.510-519.

Kline, R.B., 2015. *Principles and practice of structural equation modeling*. Guilford publications.

Koh, C.H., 1996. Testing hypotheses of entrepreneurial characteristics: A study of Hong Kong MBA students. *Journal of managerial Psychology*, *11*(3), pp.12-25.

Kolvereid, L., 1996. Organizational employment versus self-employment: Reasons for career choice intentions. *Entrepreneurship: Theory and Practice*, *20*(3), pp.23-32.

Krueger, N., 1993. The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. *Entrepreneurship: Theory and practice*, *18*(1), pp.5-22.

Krueger, N.F. and Brazeal, D.V., 1994. Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship theory and practice*, *18*, pp.91-91.

Krueger, N.F., Reilly, M.D. and Carsrud, A.L., 2000. Competing models of entrepreneurial intentions. *Journal of business venturing*, *15*(5), pp.411-432.

Kuratko, D.F., 2005. The emergence of entrepreneurship education: Development, trends, and challenges. *Entrepreneurship theory and practice*, *29*(5), pp.577-598.

Kwong, C. and Thompson, P., 2016. The when and why: student entrepreneurial aspirations. *Journal of Small Business Management*, *54*(1), pp.299-318.

Liñán, F., 2007. 13 The role of entrepreneurship education in the entrepreneurial process. *Handbook of Research in Entrepreneurship Education, Volume*, p.230.

Liñán, F. and Chen, Y.W., 2009. Development and Cross-Cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship theory and practice*, *33*(3), pp.593-617.

Liñán, F., Rodríguez-Cohard, J.C. and Rueda-Cantuche, J.M., 2005. Factors affecting entrepreneurial intention levels.

Liñán, F., Rodríguez-Cohard, J.C. and Rueda-Cantuche, J.M., 2011. Factors affecting entrepreneurial intention levels: a role for education. *International entrepreneurship and management Journal*, *7*(2), pp.195-218.

Lüthje, C. and Franke, N., 2003. The 'making'of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT. *R&d Management*, *33*(2), pp.135-147.

Malebana, J., 2014. Entrepreneurial intentions of South African rural university students: A test of the theory of planned behaviour. *Journal of Economics and behavioral studies*, *6*(2), pp.130-143.

Maresch, D., Harms, R., Kailer, N. and Wimmer-Wurm, B., 2016. The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs. *Technological forecasting and social change*, *104*, pp.172-179.

Maritz, A. and Brown, C.R., 2013. Illuminating the black box of entrepreneurship education programs. *Education+ Training*, *55*(3), pp.234-252.

Matlay, H. and Carey, C., 2007. Entrepreneurship education in the UK: a longitudinal perspective. *Journal of Small Business and Enterprise Development*, *14*(2), pp.252-263.

McClelland, D.C., 1965. Toward a theory of motive acquisition. *American psychologist*, *20*(5), p.321.

McDade, B.E. and Spring, A., 2005. The 'new generation of African entrepreneurs': networking to change the climate for business and private sector-led development. *Entrepreneurship & Regional Development*, *17*(1), pp.17-42.

McKenzie, D.J., 2015. Identifying and spurring high-growth entrepreneurship: experimental evidence from a business plan competition. *Browser Download This Paper*.

McMullen, J.S. and Shepherd, D.A., 2006. Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *Academy of Management review*, *31*(1), pp.132-152.

Milana, C. and Wang, J., 2013. Fostering entrepreneurship in China: a survey of the economic literature. *Strategic Change*, *22*(7-8), pp.387-415.

Mitchell, R.K., Busenitz, L., Lant, T., McDougall, P.P., Morse, E.A. and Smith, J.B., 2002. Toward a theory of entrepreneurial cognition: Rethinking the people side of entrepreneurship research. *Entrepreneurship theory and practice*, *27*(2), pp.93-104.

Mitchell, R.K., Busenitz, L.W., Bird, B., Marie Gaglio, C., McMullen, J.S., Morse, E.A. and Smith, J.B., 2007. The central question in entrepreneurial cognition research 2007. *Entrepreneurship theory and practice*, *31*(1), pp.1-27.

Mueller, S., 2011. Increasing entrepreneurial intention: Effective entrepreneurship course characteristics. *International Journal of Entrepreneurship and Small Business*, *13*(1), pp.55-74.

Mungai, E. and Velamuri, S.R., 2011. Parental entrepreneurial role model influence on male offspring: Is it always positive and when does it occur?. *Entrepreneurship Theory and Practice*, *35*(2), pp.337-357.

Mustafa, M.J., Mustafa, M.J., Hernandez, E., Hernandez, E., Mahon, C., Mahon, C., Chee, L.K. and Chee, L.K., 2016. Entrepreneurial intentions of university students in an emerging economy: The influence of university support and proactive personality on students' entrepreneurial intention. *Journal of Entrepreneurship in Emerging Economies*, *8*(2), pp.162-179.

Nabi, G., Liñán, F., Fayolle, A., Krueger, N. and Walmsley, A., 2017. The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education*, *16*(2), pp.277-299.

National Universities Commission, 2011. Benchmark Minimum Academic Standards for Undergraduate Programs in Nigerian Universities (GST Entrepreneurship). Unpublished Internal Document.

Neck, H.M. and Greene, P.G., 2011. Entrepreneurship education: known worlds and new frontiers. *Journal of Small Business Management*, *49*(1), pp.55-70.

Noll, C.L., 1993. Planning curriculum for entrepreneurship education. In *Business Education Forum* (Vol. 47, No. 3, pp. 3-6). Harcourt College Publishers.

Ogunsola, L.A. and Aboyade, W.A., 2005. Information and communication technology in Nigeria: Revolution or evolution. *Journal of Social science*, *11*(1), pp.7-14.

Oguntimehin, Y.A. and Olaniran, O.O., 2017. The Relationship Between Entrepreneurship Education And Students 'entrepreneurial Intentions In Ogun State-Owned Universities, Nigeria. *British Journal of Education*, *5*(3), pp.9-20.

Oh, S.S. and Lewis, G.B., 2011. Stemming inequality? Employment and pay of female and minority scientists and engineers. *The Social Science Journal*, *48*(2), pp.397-403.

Oosterbeek, H., Van Praag, M. and Ijsselstein, A., 2010. The impact of entrepreneurship education on entrepreneurship skills and motivation. *European economic review*, *54*(3), pp.442-454.

Pajares, F., 1997. Current directions in self-efficacy research. *Advances in motivation and achievement*, *10*(149), pp.1-49.

Pallant, J., 2010. SPSS survival manual: A step by step guide to data analysis using SPSS . Maidenhead.

Peterman, N.E. and Kennedy, J., 2003. Enterprise education: Influencing students' perceptions of entrepreneurship. *Entrepreneurship theory and practice*, *28*(2), pp.129-144.

Pentyala, S., Dilger, J. and Rebecchi, M., 2016. Minority Students and STEM Careers: Will Mentoring Help?. *Journal of Health Education Research & Development*, pp.1-5.

Piperopoulos, P. and Dimov, D., 2015. Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions. *Journal of Small Business Management*, *53*(4), pp.970-985.

Rauch, A. and Frese, M., 2000. Psychological approaches to entrepreneurial success: A general model and an overview of findings. *International review of industrial and organizational psychology*, *15*, pp.101-142.

Rideout, E.C. and Gray, D.O., 2013. Does entrepreneurship education really work? A review and methodological critique of the empirical literature on the effects of university-based entrepreneurship education. *Journal of Small Business Management*, *51*(3), pp.329-351.

Robinson, P.B., Stimpson, D.V., Huefner, J.C. and Hunt, H.K., 1991. An attitude approach to the prediction of entrepreneurship. *Entrepreneurship theory and practice*, *15*(4), pp.13-31.

Rotter, J.B., 1966. Generalized expectancies for internal versus external control of reinforcement. *Psychological monographs: General and applied*, *80*(1), p.1.

Ruud, P.A., 1991. Extensions of estimation methods using the EM algorithm. *Journal of Econometrics*, *49*(3), pp.305-341.

Sadler, P.M., Sonnert, G., Hazari, Z. and Tai, R., 2012. Stability and volatility of STEM career interest in high school: A gender study. *Science Education*, *96*(3), pp.411-427.

Saeed, S., Yousafzai, S.Y., Yani-De-Soriano, M. and Muffatto, M., 2015. The role of perceived university support in the formation of students' entrepreneurial intention. *Journal of Small Business Management*, *53*(4), pp.1127-1145.

Samwel Mwasalwiba, E., 2010. Entrepreneurship education: a review of its objectives, teaching methods, and impact indicators. *Education+ Training*, *52*(1), pp.20-47.

Sánchez, J.C., 2013. The impact of an entrepreneurship education program on entrepreneurial competencies and intention. *Journal of Small Business Management*, *51*(3), pp.447-465.

Saunders, M.N., 2012. *Research methods for business students, 6/e*. Pearson Education India.

Scherer, R.F., Adams, J.S., Carley, S. and Wiebe, F.A., 1989. Role model performance effects on development of entrepreneurial career preference.

Segal, G., Borgia, D. and Schoenfeld, J., 2005. The motivation to become an entrepreneur. *International journal of Entrepreneurial Behavior & research*, *11*(1), pp.42-57.

Sexton, D.L. and Bowman, N., 1985. The entrepreneur: A capable executive and more. *Journal of business venturing*, *1*(1), pp.129-140.

Shadish,W.R, Cook, T.D. and Campbell, D.T., 2002. *Experimental and quasi-experimental designs for generalized causal inference*. Wadsworth Cengage learning.

Shapero, A. and Sokol, L., 1982. The social dimensions of entrepreneurship.

Sieger, P. and Monsen, E., 2015. Founder, academic, or employee? A nuanced study of career choice intentions. *Journal of Small Business Management*, *53*(S1), pp.30-57.

Shinnar, R.S., Hsu, D.K. and Powell, B.C., 2014. Self-efficacy, entrepreneurial intentions, and gender: Assessing the impact of entrepreneurship education longitudinally. *The International Journal of Management Education*, *12*(3), pp.561-570.

Shook, C.L., Priem, R.L. and McGee, J.E., 2003. Venture creation and the enterprising individual: A review and synthesis. *Journal of management*, *29*(3), pp.379-399.

Solt, F., 2008. Economic inequality and democratic political engagement. *American Journal of Political Science*, *52*(1), pp.48-60.

Souitaris, V., Zerbinati, S. and Al-Laham, A., 2007. Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business venturing*, *22*(4), pp.566-591.

Sturgis, P., Roberts, C. and Smith, P., 2014. Middle alternatives revisited: How the neither/nor response acts as a way of saying "I don't know"?. *Sociological Methods & Research*, *43*(1), pp.15-38.

Thursby, M.C., Fuller, A.W. and Thursby, J., 2009. An integrated approach to educating professionals for careers in innovation. *Academy of Management Learning & Education*, *8*(3), pp.389-405.

Van Auken, H., Fry, F.L. and Stephens, P., 2006. The influence of role models on entrepreneurial intentions. *Journal of developmental Entrepreneurship*, *11*(02), pp.157-167.

Van Auken, H., Stephens, P., Fry, F.L. and Silva, J., 2006. Role model influences on entrepreneurial intentions: A comparison between USA and Mexico. *The International Entrepreneurship and Management Journal*, *2*(3), pp.325-336.

Veciana, J.M., Aponte, M. and Urbano, D., 2005. University students' attitudes towards entrepreneurship: A two countries comparison. *The International Entrepreneurship and Management Journal*, *1*(2), pp.165-182.

Von Graevenitz, G., Harhoff, D. and Weber, R., 2010. The effects of entrepreneurship education. *Journal of Economic Behavior & Organization*, *76*(1), pp.90-112.

Walter, S.G., Parboteeah, K.P. and Walter, A., 2011. University Departments and Self-Employment Intentions of Business Students: A Cross-Level Analysis.*Entrepreneurship theory and practice.*

Walter, S.G., Parboteeah, K.P. and Walter, A., 2013. University departments and self-employment intentions of business students: a cross-level analysis. *Entrepreneurship Theory and Practice*, *37*(2), pp.175-200.

Wang, J., 2013. *Institutional Change and the Development of Industrial Clusters in China: Case Studies from the Textile and Clothing Industry* (Vol. 2). World Scientific.

Wang, J. and Gooderham, P., 2014. Institutional change and regional development in China: the case of commodity trading markets. *Environment and Planning C: Government and Policy*, *32*(3), pp.471-490.

Wang, C.K. and Wong, P.K., 2004. Entrepreneurial interest of university students in Singapore. *Technovation*, *24*(2), pp.163-172.

Wilson, F., Kickul, J. and Marlino, D., 2007. Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: implications for entrepreneurship education. *Entrepreneurship theory and practice*, *31*(3), pp.387-406.

Wood, R. and Bandura, A., 1989. Social cognitive theory of organizational management. *Academy of management Review*, *14*(3), pp.361-384.

Yatu, L., Loon, M. and Bell, R., 2016. A systematic review of entrepreneurship education literature in Nigeria: where is the focus of research?

Zahra, S.A., 1993. Environment, corporate entrepreneurship, and financial performance: A taxonomic approach. *Journal of business venturing*, *8*(4), pp.319-340.

Zhao, H., Seibert, S.E. and Hills, G.E., 2005. The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of applied psychology*, *90*(6), p.1265.

http://www.cbn.gov.ng/rates/ExchangeArchives.aspAccessed 23rd November, 2016.

https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html 6th February, 2017.

http://www.jamb.gov.ng/home.aspx Accessed 16th October, 2016.

http://www.worldatlas.com/webimage/countrys/africa/ng.htm Accessed 20th February, 2017

http://www.opec.org/opec_web/en/about_us/167.htmAccessed 9th February, 2017.

https://data.worldbank.org/indicator/SP.POP.TOTL?locations=NGAccessed 9th February, 2017.

http://nuc.edu.ng/nigerian-univerisities/federal-univeristies/ Accessed 20th November, 2016.

http://nuc.edu.ng/nigerian-univerisities/state-univeristy/ Accessed 20th November, 2016.

http://nuc.edu.ng/nigerian-univerisities/private-univeristies/ Accessed 20th November, 2016.

http://nigerianstat.gov.ng/elibrary?queries[search]=unemployment Accessed 2nd January, 2017.

APPENDICES

APPENDIX 1: PHASE 1 SURVEY QUESTIONNAIRE

CODE NUMBER: ……

NOTTINGHAM TRENT UNIVERSITY

Nottingham Business School
Nottingham Trent University
Burton Street
Nottingham, NG1 4BU

Informed consent to participate in *Entrepreneurship* research

This form will provide you with information about the research.
Please read through all the details carefully.

The purpose of this study is to examine the impact of entrepreneurship education on your career choice.

You are being asked to take part in this survey lasting approximately twenty-five minutes. The researcher will ask a series of questions about your likely choice of professional careers, your knowledge of an entrepreneur, your perceptions of personal ambitions, and your perceptions of confidence in performing specific entrepreneurial tasks.

Questions are clear and concise to enable participants have a clear understanding of questions to be answered.

Your permission is required to collect the data. During the survey, please let the researcher know if you do not understand some of the questions or you wish to withdraw from the participation at any point from point of collecting the data to analyzing the data. There are no consequences to deciding not to participate in this study.

Your participation in this survey is entirely voluntary. You will be required to provide your most preferred contact details to easily follow-up this study where necessary. You have the right to withdraw without giving a reason to do so. If you wish to withdraw, you should contact the researcher and ask for your data to be withdrawn from the study by July 2016.

Due to the nature of the research, data from the survey will be used in the final report. To protect your anonymity all names, places and organizations will be changed. Only I will have access to the raw data. All data will be destroyed after publication of the research.

Upon completion of the questionnaire you are free to ask any questions you may have about the experiment or research in general. **A CODE NUMBER** is made available to you at the top right-hand corner of the questionnaire in case any of the questions asked later prove to be upsetting to you. **You are required to note down your assigned code number for referencing and follow-up.**

Participation is voluntary and greatly appreciated. If you are happy to take part in this research, please sign and date below. If you have any questions or concerns before, during or after your participation in this research my contact details are on the bottom of this form.

Hussaina Goje is a PHD student at Nottingham Business School, Nottingham Trent University. The student privately sponsors this project.

Thank you for agreeing to consider participating in this research project.

Agreement to consent

- I have read and I understand the purpose of this research and my part in it. ☐
- By handing this questionnaire back to you, completed, I am giving my consent for you to use my questionnaire answers in this research study. ☐
- I understand that I have the right to withdraw my questionnaire at any point up until the deadline, and understand that all materials would be destroyed ☐
- I voluntarily agree to take part in this study. ☐
- I agree to be contacted to follow-up this study ☐
- I have made a note of my participant reference code number. ☐

Signature of participant: _____
Date: _____

_____

Investigator contact details:
Hussaina Goje
PHD student (Graduate Entrepreneurship)
E-mail: hussaina.goje2012@my.ntu.ac.uk

Nottingham Business School,
Nottingham Trent University
Burton Street,
Nottingham NG1 4BU.

Thank you for participating in this survey.

1. **PERSONAL DETAILS**

Age:-

I) 19-25 ( )
II) 26-32 ( )
III) 33-39 ( )
IV) 39 and above ( )

2. Gender:
Male ( ), Female ( )

3. Course of study……

4. **CAREER INTENTIONS**

Please indicate your options in regards to your future professional career below. please indicate your preference with a tick.

		Would prefer to be employed by someone	May be employed by someone	Not Decided yet	May be become self-employed	Would prefer to be self-employed
		1	2	3	4	5
A.	If you were to choose between running your own business and being employed by someone, what would you prefer?					

		Unlikely	Might Unlikely	Not Decided yet	Might Likely	Likely
		1	2	3	4	5
B.	How likely is it that you will pursue a career as self-employed?					

		Unlikely	Might Unlikely	Not Decided yet	Might Likely	Likely
		1	2	3	4	5
C.	How likely is it that you will pursue a career as an employee in an organization?					

5. PERSONAL AMBITION (PERCEIVED DESIRABILITY)

The desire for professional career is often related to personal ambitions. Please indicate the extent to which you agree with the following in improving your interest in your career? 1= No extent to 5= a very great extent. Please indicate your preference in all categories with a tick.

		No extent	Little extent	Not sure	Great extent	A very great extent
		1	2	3	4	5
A.	To challenge myself					
B.	To fulfil a personal vision					
C.	To have the power to greatly influence an organization					
D.	To lead and motivate others					
E.	To earn a larger personal income					
F.	To give my self and family financial security					
G.	To have a chance to build great wealth/high income					
H.	To build a business my children can inherit					
I.	To continue a family tradition					
J.	To follow example of a person I admire					
K.	To be innovative at the forefront of technology					
L.	To develop an idea for a product					
M.	To achieve something and get recognition					
N.	To gain a higher position for myself					
O.	To be respected by my friends					
P.	To get greater flexibility for personal life					
Q.	To be free to adapt my approach to work					

6. SELF CONFIDENCE (ENTREPRENRUIAL SELF-EFFICACY)

Below are lists of business related subjects. Indicate how confident you would be practicing the following activities in five areas of business. 1= No confidence to 5= Complete confidence. (Please provide your honest answers while indicating in all categories).

		No confidence	Little confidence	Not sure	Confidence	Complete confidence
		1	2	3	4	5
A.	Set and meet market share goals					
B.	Set and meet sales goals					
C.	Set and attain profit goals					

D.	Establish position in product market					
E.	Conduct market analysis					
F.	Expand business					
G.	New venture and new ideas					
H.	New products and services					
I.	New markets and geographic territories					
J.	New methods of production, marketing and management					
K.	Reduce risk and uncertainty					
L.	Strategic planning and develop information systems					
M.	Manage time by setting goals					
N.	Establish and achieve goals and objectives					
O.	Define organisational roles, responsibilities, and policies					
P.	Take calculated risks					
Q.	Make decisions under uncertainty and risk					
R.	Take responsibility for ideas and decisions					
S.	Work under pressure and conflict					
T.	Perform financial analysis					
U.	Develop financial system and internal controls					
V.	Control cost					

7. KNOWLEDGE OF AN ENTREPRENEUR

Do you personally know an entrepreneur?

YES ☐ **NO** ☐

8. PARENTAL STATUS

Please indicate freely your parent status of occupation

A. Work for an organization in a private firm ( )
B. Work for an organization in the public sector ( )
C. Self-employed ( )
D. Retired ()
E. Unemployed ( )

9. FAMILY INCOME LEVEL

Please indicate the range of your family income level below

A. N18, 000 - N50, 000 ( )
B. N51, 000 - N150, 000 ( )
C. N151, 000 - N250, 000 ( )
D. N251, 000 - N350, 000 ( )
E. N351, 000 and above ( )

Contact details…… Thank you for participating in this survey

APPENDIX 2: PHASE 2 SURVEY QUESTIONNAIRE

CODE NUMBER: ……

NOTTINGHAM TRENT UNIVERSITY

Nottingham Business School
Nottingham Trent University
Burton Street
Nottingham, NG1 4BU

Informed consent to participate in *Entrepreneurship* research

This form will provide you with information about the research.
Please read through all the details carefully.

The purpose of this study is to examine the impact of entrepreneurship education on your career choice.

You are being asked to take part in this survey lasting approximately twenty-five minutes. The researcher will ask a series of questions about your likely choice of professional careers, your knowledge of an entrepreneur, your perception of the knowledge and skills you have gained after the entrepreneurship program, your perceptions of personal ambitions, and your perceptions of confidence in performing specific entrepreneurial tasks.

Questions are clear and concise to enable participants have a clear understanding of questions to be answered.

Your permission is required to collect the data. During the survey, please let the researcher know if you do not understand some of the questions or you wish to withdraw from the participation at any point from point of collecting the data to analyzing the data. There are no consequences to deciding not to participate in this study.

This research involves collecting data in two periods. The first phase was collected at the early stages of entrepreneurship program, and the second phase **(THIS QUESTIONNAIRE)** at the final stages of the entrepreneurship program. However, your participation in this survey is entirely voluntary. You will be required to provide your most preferred contact details to easily follow-up this study where necessary.

You have the right to withdraw without giving a reason to do so. If you wish to withdraw, you should contact the researcher and ask for your data to be withdrawn from the study by July 2016.

Due to the nature of the research, data from the survey will be used in the final report. To protect your anonymity all names, places and organizations will be changed. Only I will have access to the raw data. All data will be destroyed after publication of the research.

Upon completion of the questionnaire you are free to ask any questions you may have about the experiment or research in general. **A CODE NUMBER** is made available to you at the top right-hand corner of the questionnaire in case any of the questions asked later prove to be upsetting to you. **You are required to note down your assigned code number for referencing and follow-up.**
Participation is voluntary and greatly appreciated. If you are happy to take part in this research, please sign and date below. If you have any questions or concerns before, during or after your participation in this research my contact details are on the bottom of this form.

Hussaina Goje is a PHD student at Nottingham Business School, Nottingham Trent University. The student privately sponsors this project.

Thank you for agreeing to consider participating in this research project.

Agreement to consent

- I have read and I understand the purpose of this research and my part in it. ☐
- By handing this questionnaire back to you, completed, I am giving my consent for you to use my questionnaire answers in this research study. ☐
- I understand that I have the right to withdraw my questionnaire at any point up until the deadline, and understand that all materials would be destroyed ☐
- I voluntarily agree to take part in this study. ☐
- I agree to be contacted to follow-up this study ☐
- I have made a note of my participant reference code number. ☐

Signature of participant: _____
Date: _____

_____

Investigator contact details:
Hussaina Goje
PHD student (Graduate Entrepreneurship)
E-mail: hussaina.goje2012@my.ntu.ac.uk

Nottingham Business School,
Nottingham Trent University
Burton Street,
Nottingham NG1 4BU.

Thank you for participating in this survey.

PERSONAL DETAILS

1. Age: -
   V) 19-25 ( )
   VI) 26-32 ( )
   VII) 33-39 ( )
   VIII) 39 and above ( )

2. Gender:
   Male ( ), Female ( )

3. Course of study……

4. CAREER INTENTIONS

Please indicate your options in regards to your future professional career below. please indicate your preference with a tick.

		Would prefer to be employed by someone	May be employed by someone	Not Decided yet	May be become self-employed	Would prefer to be self-employed
		1	2	3	4	5
D.	If you were to choose between running your own business and being employed by someone, what would you prefer?					

		Unlikely	Might Unlikely	Not Decided yet	Might Likely	Likely
		1	2	3	4	5
A.	How likely is it that you will pursue a career as self-employed?					

		Unlikely	Might Unlikely	Not Decided yet	Might Likely	Likely
		1	2	3	4	5
B.	How likely is it that you will pursue a career as an employee in an organization?					

5. PERSONAL AMBITION (PERCEIVED DESIRABILITY)

The desire for professional career is often related to personal ambitions. Please indicate the extent to which you agree with the following in improving your interest in your career? 1= No extent to 5= a very great extent. Please indicate your preference in all categories with a tick.

		No extent	Little extent	Not sure	Great extent	A very great extent
		1	2	3	4	5
A.	To challenge myself					
B.	To fulfil a personal vision					
C.	To have the power to greatly influence an organization					
D.	To lead and motivate others					
E.	To earn a larger personal income					
F.	To give my self and family financial security					
G.	To have a chance to build great wealth/high income					
H.	To build a business my children can inherit					
I.	To continue a family tradition					
J.	To follow example of a person I admire					
K.	To be innovative at the forefront of technology					
L.	To develop an idea for a product					
M.	To achieve something and get recognition					
N.	To gain a higher position for myself					
O.	To be respected by my friends					
P.	To get greater flexibility for personal life					
Q.	To be free to adapt my approach to work					

6. SELF CONFIDENCE (ENTREPRENRUIAL SELF-EFFICACY)

Below are lists of business related subjects. Indicate how confident you would be practicing the following activities in five areas of business. 1= No confidence to 5= Complete confidence. (Please provide your honest answers while indicating in all categories).

		No confidence	Little confidence	Not sure	Confidence	Complete confidence
		1	2	3	4	5
A.	Set and meet market share goals					
B.	Set and meet sales goals					
C.	Set and attain profit goals					

D.	Establish position in product market					
E.	Conduct market analysis					
F.	Expand business					
G.	New venture and new ideas					
H.	New products and services					
I.	New markets and geographic territories					
J.	New methods of production, marketing and management					
K.	Reduce risk and uncertainty					
L.	Strategic planning and develop information systems					
M.	Manage time by setting goals					
N.	Establish and achieve goals and objectives					
O.	Define organisational roles, responsibilities, and policies					
P.	Take calculated risks					
Q.	Make decisions under uncertainty and risk					
R.	Take responsibility for ideas and decisions					
S.	Work under pressure and conflict					
T.	Perform financial analysis					
U.	Develop financial system and internal controls					
V.	Control cost					

7. KNOWLEDGE OF AN ENTREPRENEUR

Do you personally know an entrepreneur?

YES ☐ **NO** ☐

8. ENTREPRENEURSHIP KNOWLEDGE AND SKILLS

Below are relevant enterprising ideas. To what extent did the entrepreneurship program increase the following. 1= not at all to 5= a very great extent (Please indicate your knowledge in all areas).

		Not at all	Little extent	Not sure	Great extent	A very great extent
		1	2	3	4	5
A.	Increase your understanding of the attitudes, values, and motivations of an entrepreneur					
B.	Increase your understanding of the action one needs to take in order to start a business					
C.	Increase your practical management knowledge and skills of how to start a new venture					
D.	Increase your abilities to create networks					
E.	Increase your ability to exploit an opportunity					

9. PARENTAL STATUS

Please indicate freely your parent status of occupation

F. Work for an organization in a private firm ( )
G. Work for an organization in the public sector ( )
H. Self-employed ( )
I. Retired ()
J. Unemployed ( )
K.

10. FAMILY INCOME LEVEL

Please indicate the range of your family income level below

F. N18, 000 - N50, 000 ( )
G. N51, 000 - N150, 000 ( )
H. N151, 000 - N250, 000 ( )
I. N251, 000 - N350, 000 ( )
J. N351, 000 and above ( )

Contact details…… Thank you for participating in this survey

APPENDIX 3: ETHICAL FORM

Principal Investigator's Declaration

Please tick all the boxes relevant to your project, and sign this form. Doctoral students must ask their Director of Studies to countersign it before it is submitted.

I believe that this project does not require the approval of a research ethics committee. I have completed Sections 1-2 and kept a copy for my own records	
I request that this project is exempt from review by the College Research Ethics Committee, because it will be, or has been, reviewed by an external REC. I have completed Sections 1-4 and attach/will attach a copy of the favourable ethical review issued by the external REC Please give the name of the external REC here	
I request a statement of ethical approval from the College of BLSS Research Ethics Committee, and confirm that I have answered all relevant questions in this form honestly	•
I confirm that I will carry out the project in the ways described above, and that I will request a fresh ethical approval if the project subsequently changes in ways that materially affect the information I have given in this form	•
I confirm that I have read and agree to abide by the code of research ethics issued by the relevant national learned society, and that I have ensured that all members of my research team (if any) also do so	•
I confirm that I have read and agree to abide by the University's Research Governance Framework, and that I have ensured that those members of my research team (if any) who are employees of Nottingham Trent University also do so	•

Signed____HUSSAINA GOJE_____(Principal investigator or Doctoral student)

Date_____16/06/2016_____

I have read this form, and confirm that it covers all the ethical issues raised by this project fully and frankly. I also confirm that these issues have been discussed with the candidate, and will continue to be reviewed in the course of supervision.

Countersigned_____ Dr. K. Galanakis (Director of Studies)

Date____18/06/2016_____

Note: If you are submitting this form by email, you should type your name in the signature space: an email attachment sent from your university inbox will be assumed to have been virtually signed by you.

If you are a doctoral student and are submitting this form by email, please attach an email from your DoS confirming that they are prepared to make the declaration above and to countersign this form: this email will be taken as a virtual countersignature.

APPENDIX 4: T-TEST RESULTS OF EI, PD, and, ESE

INDEPENDENT T-TEST FOR TOTAL SAMPLE AT PHASE 1

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EI (1)	Equal variances assumed	1.690	.195	1.283	179	.201	.25442	.19831	-.13691	.64575
	Equal variances not assumed			1.286	178.936	.200	.25442	.19790	-.13610	.64494
PD (1)	Equal variances assumed	.258	.612	-.874	179	.383	-.09759	.11165	-.31791	.12272
	Equal variances not assumed			-.872	176.313	.384	-.09759	.11186	-.31835	.12316
ESE (1)	Equal variances assumed	1.505	.222	.917	179	.360	.09916	.10810	-.11415	.31247
	Equal variances not assumed			.921	177.579	.358	.09916	.10767	-.11331	.31163

INDEPENDENT T-TEST FOR TOTAL SAMPLE AT PHASE 2

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EI (2)	Equal variances assumed	16.237	.000	15.230	176	.000	2.35187	.15442	2.04712	2.65662
	Equal variances not assumed			15.323	139.068	.000	2.35187	.15349	2.04840	2.65534
PD (2)	Equal variances assumed	28.409	.000	3.598	176	.000	.41155	.11439	.18580	.63731
	Equal variances not assumed			3.615	151.799	.000	.41155	.11385	.18662	.63649
ESE (2)	Equal variances assumed	18.983	.000	2.898	176	.004	.30601	.10560	.09761	.51441
	Equal variances not assumed			2.911	154.129	.004	.30601	.10513	.09834	.51368

APPENDIX 5: REGRESSION RESULTS FOR PD, AND, ESE ON EI

Regression model of Perceived Desirability for Entrepreneurship and Entrepreneurial Self-Efficacy upon Entrepreneurial Intentions at Phase 1

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.567[a]	.321	.313	.99885	2.036

a. Predictors: (Constant), ESE 1, PD 1

b. Dependent Variable: EI 1

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	83.936	2	41.968	42.064	.000[b]
	Residual	177.591	178	.998		
	Total	261.527	180			

a. Dependent Variable: EI 1

b. Predictors: (Constant), ESE 1, PD 1

Standardized Coefficient of Perceived Desirability for Entrepreneurship and Entrepreneurial Self-Efficacy upon Entrepreneurial Intentions at Phase 1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.663	.346		1.915	.057					
	PD 1	.450	.112	.333	4.023	.000	.524	.289	.248	.558	1.791
	ESE 1	.409	.117	.288	3.485	.001	.509	.253	.215	.558	1.791

a. Dependent Variable: NEW EI 1

Regression model of Perceived Desirability for Entrepreneurship and Entrepreneurial Self-Efficacy upon Entrepreneurial Intention at Phase 2

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.415[a]	.172	.163	1.32349	.947

a. Predictors: (Constant), ESE 2, PD 2

b. Dependent Variable: EI 2

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	63.831	2	31.915	18.220	.000[b]
	Residual	306.536	175	1.752		
	Total	370.367	177			

a. Dependent Variable: EI 2

b. Predictors: (Constant), ESE 2, PD 2

Standardized Coefficient of Perceived Desirability for Entrepreneurship and Entrepreneurial Self-Efficacy upon Entrepreneurial Intentions at Phase 2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.174	.524		.332	.740					
	PD 2	.380	.192	.213	1.983	.049	.389	.148	.136	.410	2.440
	ESE 2	.455	.214	.228	2.127	.035	.392	.159	.146	.410	2.440

a. Dependent Variable: NEW EI 2

APPENDIX 6: RESULTS FOR ALL VARIABLES ON EI

Regression model of all Variables upon Entrepreneurial Intentions at Phase 1

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.123[a]	.015	-.021	1.21780	
2	.577[b]	.333	.300	1.00851	1.933

a. Predictors: (Constant), Family income level, Gender, Personally know an entrepreneur, Dummy V Parent Status, Age, Course of study

b. Predictors: (Constant), Family income level, Gender, Personally know an entrepreneur, Dummy V Parent Status, Age, Course of study, ESE 1, PD 1

c. Dependent Variable: EI 1

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.748	6	.625	.421	.864[b]
	Residual	244.702	165	1.483		
	Total	248.451	171			
2	Regression	82.666	8	10.333	10.160	.000[c]
	Residual	165.785	163	1.017		
	Total	248.451	171			

a. Dependent Variable: EI 1

b. Predictors: (Constant), Family income level, Gender, Personally know an entrepreneur, Dummy V Parent Status, Age, Course of study

c. Predictors: (Constant), Family income level, Gender, Personally know an entrepreneur, Dummy V Parent Status, Age, Course of study, ESE 1, PD 1

Standardized Coefficients of all Variables upon Entrepreneurial Intentions at Phase 1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3.871	.651		5.948	.000	2.586	5.156					
	Age	-.156	.346	-.036	-.451	.652	-.838	.526	-.042	-.035	-.035	.946	1.057
	Gender	-.112	.198	-.046	-.566	.572	-.504	.279	-.037	-.044	-.044	.912	1.096
	Course of study	.060	.199	.024	.301	.764	-.333	.453	.016	.023	.023	.925	1.081
	Personally know an entrepreneur	.192	.233	.065	.823	.412	-.269	.653	.055	.064	.064	.970	1.031
	Dummy V Parent Status	-.185	.195	-.075	-.948	.344	-.569	.200	-.073	-.074	-.073	.963	1.038
	Family income level	.041	.074	.044	.556	.579	-.105	.187	.058	.043	.043	.955	1.047
2	(Constant)	.093	.690		.134	.893	-1.271	1.456					
	Age	.185	.290	.043	.640	.523	-.386	.757	-.042	.050	.041	.924	1.082
	Gender	.079	.166	.032	.477	.634	-.248	.406	-.037	.037	.031	.896	1.116
	Course of study	-.012	.166	-.005	-.072	.942	-.339	.315	.016	-.006	-.005	.919	1.088
	Personally know an entrepreneur	.207	.196	.070	1.059	.291	-.179	.593	.055	.083	.068	.946	1.057
	Dummy V Parent Status	-.121	.162	-.049	-.751	.453	-.441	.198	-.073	-.059	-.048	.960	1.042
	Family income level	.062	.062	.066	.997	.320	-.060	.183	.058	.078	.064	.938	1.066
	PD 1	.482	.119	.357	4.052	.000	.247	.717	.524	.303	.259	.528	1.893
	ESE 1	.384	.124	.270	3.103	.002	.140	.628	.509	.236	.199	.539	1.855

a. Dependent Variable: NEW EI 1

Regression model of all Variables upon Entrepreneurial Intentions at Phase 2

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.269[a]	.072	.039	1.49549	
2	.476[b]	.227	.189	1.37378	.965

a. Predictors: (Constant), Family income level, Age, Dummy V parents status T2, Course of study T2, Personally know an entrepreneur, Gender

b. Predictors: (Constant), Family income level, Age, Dummy V parents status T2, Course of study T2, Personally know an entrepreneur, Gender, ESE 2, PD 2

c. Dependent Variable: EI 2

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.922	6	4.820	2.155	.050[b]
	Residual	371.259	166	2.237		
	Total	400.181	172			
2	Regression	90.668	8	11.333	6.005	.000[c]
	Residual	309.513	164	1.887		
	Total	400.181	172			

a. Dependent Variable: NEW EI 2

b. Predictors: (Constant), Family income level, Age, Dummy V parents status T2, Course of study T2, Personally know an entrepreneur, Gender

c. Predictors: (Constant), Family income level, Age, Dummy V parents status T2, Course of study T2, Personally know an entrepreneur, Gender, ESE 2, PD 2

Standardized Coefficients of all Variables upon Entrepreneurial Intentions at Phase 2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.606	.943		1.703	.090	-.256	3.468					
	Age	.374	.562	.051	.665	.507	-.736	1.483	.020	.052	.050	.949	1.054
	Gender	.362	.249	.119	1.453	.148	-.130	.854	.177	.112	.109	.840	1.191
	Course of study T2	.585	.264	.179	2.212	.028	.063	1.106	.221	.169	.165	.856	1.168
	Personally know an entrepreneur	-.406	.359	-.086	-1.133	.259	-1.115	.302	-.104	-.088	-.085	.966	1.036
	Dummy V parents status T2	-.102	.236	-.033	-.433	.665	-.569	.364	-.049	-.034	-.032	.978	1.022
	Family income level	-.015	.103	-.011	-.142	.887	-.218	.189	-.025	-.011	-.011	.969	1.032
2	(Constant)	-1.947	1.078		-1.805	.073	-4.076	.182					
	Age	.486	.524	.066	.928	.355	-.549	1.521	.020	.072	.064	.920	1.087
	Gender	.381	.230	.125	1.656	.100	-.073	.835	.177	.128	.114	.834	1.200
	Course of study T2	.743	.245	.227	3.028	.003	.259	1.228	.221	.230	.208	.837	1.194
	Personally know an entrepreneur	-.417	.330	-.089	-1.266	.207	-1.068	.233	-.104	-.098	-.087	.965	1.036
	Dummy V parents status T2	-.006	.218	-.002	-.026	.979	-.436	.425	-.049	-.002	-.002	.970	1.031
	Family income level	-.020	.095	-.015	-.215	.830	-.207	.166	-.025	-.017	-.015	.967	1.034
	PD 2	.437	.192	.227	2.278	.024	.058	.816	.317	.175	.156	.477	2.096
	ESE 2	.413	.199	.204	2.074	.040	.020	.806	.350	.160	.142	.488	2.051

a. Dependent Variable: NEW EI 2