

ENTREPRENEURIAL INTENTIONS AMONG UNIVERSITY STUDENTS: A CASE STUDY OF DURBAN UNIVERSITY OF TECHNOLOGY

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ABSTRACT

Whilst the rate of growth of unemployed graduates is gradually increasing, entrepreneurship is considered to be one of the factors that can increase employment and be a significant factor for economic growth in developing countries. Entrepreneurial education is measured as an important variable which impacts on entrepreneurial intentions. This study attempted to establish the impact of higher education on the entrepreneurial intentions. The study adopted stratified random sampling and a self-administered questionnaire was used to collect data from 366 respondents. The data obtained from the respondents was analyzed using the SPSS programmed. The findings revealed a positive relationship between social factors while no relation existed between entrepreneurial intentions and current education and university life. Higher educational institutions should integrate the positive change of mindset and skills about entrepreneurship in academic education and university life to nurture students' entrepreneurial intentions. This can be achieved by the development of an entrepreneurial culture amongst academic and support staff in conjunction with student clubs. Given the significance of entrepreneurship, it is desirable to transform the educational system to encourage creativity and innovation in students.

Keywords: Entrepreneurship, Unemployment, Mindset, Culture, Education.

INTRODUCTION

The promotion of entrepreneurial culture in South Africa cannot be overstated as the country's universities produce large volumes of graduates annually who are equipped to be employees; however, the rate of unemployed graduates keeps on escalating each year. Kigotho (2015) revealed that 25% of African university graduates are unemployed. Under these circumstances an assertion can therefore be made that entrepreneurship is a possible option because producing graduates that have limited practical skills constitutes a waste of time and money. However, developing and identifying a young entrepreneur is a process that calls for the involvement of higher education institutions. Society now evaluates how education, provided by higher institutions, responds to social and economic needs. Wu and Wu (2008) confirmed that higher education impacts on students with respect to their personal development, change in attitude and change in ability.

It has been realized that tertiary institutions produce graduates for whom there is no employment market. Graduates are produced for salaried employment hence the unemployment of South African graduates has become a major national problem. The period between graduation and employment has continued to lengthen and has become a basis of frustration for South African graduates. In the current circumstances, it is asserted that one of the possible options is

for these graduates to become entrepreneurs, however, developing sustainable entrepreneurs involves an education process. Koe et al. (2012) stated that entrepreneurs can actually be trained hence entrepreneurs are not always born but can be developed. Therefore, the study sets to answer the question: “*What is the impact of higher education on students’ entrepreneurial intentions at Durban University of Technology?*”

The following section discussed various types of entrepreneurships and attributes that brand an entrepreneur; entrepreneurship education and curriculum; significance and benefits of entrepreneurial education; entrepreneurship intentions; barriers to entrepreneurship; factors that influence students’ entrepreneurial intentions; the university’s role and projects and government initiatives that support entrepreneurship intentions.

LITERATURE REVIEW

Entrepreneurship

According to Raposo and Paco (2011) entrepreneurship is a vibrant process of vision, change and creation that requires energy and passion, new ideas and creative solutions. Williams (2011) translated entrepreneurship as being the process where an individual seeks to use their abilities, efforts and given resources to create their own business ventures, hence entrepreneurship is more than a simple business creation. Entrepreneurship is a term that refers to an individual who takes the risk of turning a vision into a successful business enterprise. It can be further defined as the creation of new organizations, wealth creation and ownership (Hisrich and Kearney, 2014).

Onu (2013) explained entrepreneurship as a process where individuals use their talents, efforts, and resources to establish their own ventures that capitalize on business opportunities and create value. The process of an entrepreneurship is applied in any enterprise context: it creates value where there was none; it gathers resources in an exclusive way and further involves opportunity-driven behaviour. It is a significant source and a driving force behind economic development and job growth (Kuratko et al., 2011).

Why Is Entrepreneurship Necessary?

South Africa is faced with a need to improve its economic growth-rate as well as a need to convert products and services into something meaningful and commercial. This conversion creates employment because entrepreneurship encourages competitiveness between businesses and ideas within a society. Employees are encouraged by the current downturn in the economy to become more flexible and become self-employed in areas where they have relevant skills and training. Promotion of entrepreneurial thinking will create employment for multitudes of unemployed South Africans. Free enterprise is found to be the driver of economic growth within the country and globally (Nicolaidis, 2011). This theory is supported by Akanwa and Akpanabia (2013) who stated that entrepreneurship enhanced job creation, reduced crime, and created new technology and bridged the gap between science and the market place in the Nigerian community. Free enterprise is seen as a method of dealing with issues of poverty and job creation as it fosters innovate thinking and leads to pioneering and cutting edge companies (Global Business School Network, 2013).

Entrepreneurship Development

According to Entangled (2013) entrepreneurship development is an agency that selects some entrepreneurship development courses. Koe et al. (2012) stated that entrepreneurs can actually be trained hence entrepreneurs are not necessarily born but can be developed. There are development centres that provide information about this from financial institutions and government sectors. Osemeke (2012) defined entrepreneurship development as a procedure that enhances business skills and business knowledge through structured training and institution building programmes. This procedure aims to expand the base of entrepreneurs and speed up the pace at which free enterprises are created which hastens employment and economic growth. Entrepreneurial development focusses on individuals who wish to start or enlarge their businesses by concentrating more on growth potential and innovation. Development depends on certain skills that are entrenched to transform an entrepreneur. These skills are: conceptual, human and technical skills (Osemeke, 2012).

Attributes of an Entrepreneur

Masi (2007) characterized an entrepreneur as a self-confident risk-taker who creates a product, markets it and makes money out of it, while showing commitment through hard work. Researchers have similar opinions about entrepreneurs, Bawuah et al. (2006) defined an entrepreneur as a motivator, risk-taker and a self-confident individual who wants to design and take control of her/his destiny.

Akhter and Sumi (2014) have a different view, defining an entrepreneur as a change-seeker who responds to change and uses it as an opportunity for change. Entrepreneurs are confident people who have know-how. However, some entrepreneurs are challenged by a lack of education. On the other hand, interest in entrepreneurship is growing which is resulting in more universities offering entrepreneurship as a course of study (Nicolaidis, 2011).

Entrepreneurial Education and Curriculum

Some higher education institutions recognize the importance of entrepreneurial education. They recognise what already exists and build on this in an innovative way (Heinnovate 2014). Entrepreneurial education was found to have a positive as well as negative impact on students (Packham et al., 2010). Kostoglou and Siakas (2012) suggested that entrepreneurial education has to be entrenched in all universities and in all disciplines and not limited to business studies students only. At university level the curriculum content has to stimulate a student's mind-set towards a business start-up (Abbas, 2013). The Wollo Ethiopian University has made it the university's role to promote entrepreneurship and correlate it with an entrepreneurial curriculum (Zegeye, 2013). Udeorah and Ogana (2014) suggested that entrepreneurship education should be made mandatory, irrespective of the programme of study and mismatch of skills, to enrich the curriculum. This will meet youth challenges since they are failing to acquire skills required by the labour market.

Bawuah et al. (2006) mentioned that a major obstacle in economic growth is the lack of educated entrepreneurs. It is observed that banks who lend funds to uneducated entrepreneurs lose money because there are no returns, due to the business owners' lack of business skills. The study conducted by Remeikiene et al. (2013) established the influence of education by comparing the entrepreneurial intentions of economics and mechanical engineering students after

completing their debut qualifications. The results of the survey revealed that economics students are of the opinion that education has a positive impact on their intentions of entrepreneurship, while mechanical engineering students revealed that entrepreneurial education hardly contributes to their intentions.

Remeikiene et al. (2013) reported that business education for economics students offers a positive contribution towards developing students' entrepreneurial intentions as education is perceived to be the greatest motivator. A university education offered them useful knowledge about business and their studies developed personality traits as well as exposing them to external opportunities for entrepreneurial futures when compared with engineering students. It can be concluded that entrepreneurial education is more effective for economics students when compared with mechanical engineering students. Both these empirical studies confirmed that commercial education motivates students and influences the mind.

Zegeye (2013) found that the main challenge in teaching entrepreneurship is relevance of the curriculum and the teaching methods that develop entrepreneurial competences. In response to the challenge highlighted by the previous studies, Zegeye (2013) mentioned that business courses should be developed according to this knowledge: business venture, general knowledge and opportunity and venture specific knowledge (Zegeye, 2013).

The Significance of Entrepreneurial Education

Entrepreneurial education is a model for changing attitudes and motives, which promotes responsibility and entrepreneurial thinking. Firstly, education provides individuals with independency and self-confidence. Secondly, people become aware of alternative career choices. Thirdly, one's horizon is broadened because you are better equipped to recognize opportunities. Lastly, education offers knowledge that can be used by an individual to develop new business venture opportunities. Entrepreneurs are nurtured through effective entrepreneur education. Education allows an individual to access skills and the knowledge needed to start and grow their own business. Entrepreneurship is neither magic nor generic, but a discipline that can be learned (Raposo and Paco, 2011). Lanero et al. (2011) observed Spanish university students and found that education indeed has an impact on entrepreneurship feasibility which later affects students' behaviour. This is supported by Ertuna and Gurel (2011) who mentioned that senior students are more likely to have business ownership interests than novice students.

Abbas (2013) mentioned that entrepreneurship awareness is lacking in non-business fields of higher learning. This is proved by Hamidi et al. (2008) when they conducted research on students majoring in entrepreneurship and those in medical disciplines. The results found that medical students showed a low desire to start their own business after graduating. This is supported by Ahmed et al. (2012) who highlighted that educated entrepreneurs are able to delegate responsibilities effectively.

Lack of entrepreneurial education cripples rural development as observed by Bawuah et al. (2006) who mentioned that postgraduates do not desire to go back to their villages or towns because there is no work, resulting in over populated urban areas. This observation is supported by Shane and Venkataraman (2000) who revealed the importance of free enterprise as it "*leads to increased economic efficiencies, brings innovation to market, creates new jobs, and raises employment levels*".

Education is one of the factors that separates entrepreneurs and non-entrepreneurs (Turker and Selcuk, 2009; De Jorge et al., 2012). This is also supported by Arenius and Minniti (2005) who mentioned that individuals with a higher formal education are more likely to pursue

entrepreneurial careers. Entrepreneurs are shaped by the information that they already have and education packages aim at building on this knowledge and skills. It is found that 67% of students who attended entrepreneurial education courses expressed a greater desire to start their own business than those who did not attend the course (Hattab, 2014). A study conducted in the Western Cape at Khayelitsha discovered that 53.2% of the participants felt that education and training influenced their entrepreneurial decisions, while 72.7% felt that education plays a vital role in the success of business (Gwija et al., 2014). Wilson et al. (2007) stated that entrepreneurship studies have the potential of increasing a student's interest in starting a business as a career.

Lack of knowledge has been found to be a barrier for students and this shortcoming can be remedied by education. Although most individuals start a business without higher education they are continually on the look-out for any form of learning to enhance not only their business acumen but also to build their confidence when making business and personal decisions. The positive impact of personality traits can be greatly reinforced by entrepreneurial education (Remeikiene et al., 2013).

Researchers suggested that polytechnics should instil entrepreneurial knowledge in students as this would be useful to the students in their future endeavours. Higher learning institutions can do this as they are given a mandate to play a prominent role in students' lives (Zegeye, 2013). The literature that has been explored by various researchers about entrepreneurial education proves that there is a need to examine how higher education institutions can influence students towards entrepreneurship.

Though several conducted studies have found similar results, Graevenitz et al. (2010) showed a negative impact. They found a decrease of interest, to a certain degree, in students after attending entrepreneurial studies. These results are further argued and analysed by Lorz et al., (2011) who mentioned that these results are dissimilar to other studies because of the method used to collect data (small sample and design).

University Role and Projects to Support Entrepreneurship Intentions

Koe et al. (2012) suggested that providing internship programs would enhance students' desires. According to Fayolle and Gailly (2015) numerous empirical studies have shown that a positive image towards entrepreneurship within a university campus encourages students. Colombian universities sampled three groups of students, where the entrepreneurial intention of students was observed from those universities that invested entrepreneurship support and training. In 2004 the University of Ghana introduced a compulsory entrepreneurship course for all their novices, in an attempt to cultivate an entrepreneurial mind-set in Ghanaian Youth (Bawuah et al., 2006). This development was also conducted by Kumasi polytechnic in Ghana where it is compulsory for every higher national diploma student to take one semester of the entrepreneurship course before qualifying for graduation (Wongnaa and Seyram, 2014).

Hinson (2004) noted achievements that were gained through the facilitation of entrepreneurial activities, where a youth competition was introduced "*Grow the Young Entrepreneur Competition*". The competition resulted in students receiving major funding to start their own businesses. The Ministry of Private Sector Development in Ghana set up funds from Student in Free Enterprise (SIFE) activities. SIFE is the global non-profit organisation which operates in 1700 universities. It sponsors community-based business development education projects (Bawuah et al., 2006).

Bawuah et al. (2006) further stated that educators cannot screen potential entrepreneurs

therefore they should provide entrepreneurial education to all students of all disciplines. Taatila (2010) confirmed that practical entrepreneurial projects which are conducted in a real live environment with real customers are found to be effective. Studies conducted by Udeorah and Ogana (2014) found that a number of polytechnics in Nigeria offer entrepreneurship development programs within higher institutions. Vaal University of Technology is one of the universities that has stated that it is an entrepreneurial encouraging university, and has promoted this innovation on its website. The University of Johannesburg is also promoting the idea of entrepreneurship by giving its students practical experience through a partnership with the Direct Selling Association (DSA). The students involved are exposed to direct selling and practical sales management. Students in Management Sciences are given a two-year opportunity in practical sales and a one year practical sales management experience (Nicolaidis, 2011). Nicolaidis (2011) further highlighted that learning institutions should be the catalyst for business start-up for students. Teaching and learning should provide support and maximize the potential of individual students. A university is a place for teamwork between students, academics and the university as a whole-it is a hub incorporating all the features necessary for advancing a young mind.

RESEARCH METHODOLOGY

Research Design and Methods

The philosophy chosen is ontology subjectivism because it examines beliefs and attitudes that motivate students to act in a particular way after receiving knowledge from higher education institutions. According to Wilson (2014) ontology is concerned with the nature of reality. This was a descriptive cross-sectional study because it describes an existing phenomena and a researcher wants to describe existing situations better by giving factors. The quantitative method has been identified as most suitable because it draws a large and representative sample from the target population. A generalization is constructed regarding the target population as a whole. This study adopted a deductive approach, it begins and applies the well-known theory of entrepreneurship education, and a problem question is based on the existing theory. Wilson (2014) stated that a deductive approach applies to an existing theory while an inductive approach generates a new theory.

Participants and Location of the Study

The University is a place that has the ability to design and develop curricula that meet the demands of students as well as the needs of ever-evolving industries. It offers various qualifications like: Higher National Diploma, Bachelor's degree, Honours and Postgraduate programmes (Zegeye, 2013). The group of DUT students from the second level up to postgraduate level formed the target population for this study; these participants were drawn from three faculties (Applied Sciences, Health Sciences and Management Sciences). The students at first level were excluded as they only had seven months experience of the university's education at the time of the collection of data. Therefore, second year students who are halfway through the completion of their debut qualification were chosen. It is believed that by the time of data collection they would have received in-depth exposure to a university education, as well as to the university environment.

Recruitment of Study Participants

Define population: In this study the population is 7491 currently registered students in three faculties (Applied Science, Health Science and Management Science) at Durban campuses. Sekaran and Bougie (2010) indicated that it is vital to define terms of elements, geographical parameters and time. The appropriate sample size was 365 as recommended, with a confidence level of 95% and a margin of error of 5%. Probability sampling was chosen for this study because it has the greatest freedom from bias which is caused by the difference between the actual population and the sampling frame. This study adopted stratified random sampling because there is variation within the population therefore this technique ensures that every stratum is effectively represented. It also has a lower sampling error than simple, random sampling (Wilson, 2014).

The total number of 365 plus 10% (for non-response or incomplete questionnaire, 401) questionnaires were distributed to collect the data. Faculties were identified as the strata, and the sample of 401 consisted of 137 applied sciences, 122 health sciences and 142 management sciences. The number chosen for each faculty is appropriate to the size of the stratum in relation to the entire population. During the process of data collection the lecturers were asked for 15 minutes of their lecturing time. The questionnaires were distributed by the researcher who waited for the respondents to complete the survey and collected them once completed.

Construction of the Instrument

According to Wilson (2014) the questionnaire construction process is essential in that, these key factors are considered: purpose of the research, layout, length and questionnaire. Questionnaires must be well-developed taking into account the principles of wording and appearance of the questionnaire (Sekaran, 2010). The questionnaire consisted of 15 questions. The questions relating to specific sections fell within the same theme as a logical order encourages respondents to complete the survey because of the flow of a questionnaire. The questionnaire for this study has closed questions because this technique helps the respondent to make quick decisions. Also, closed questions help the researcher to code information simply for analysis and presentation (Sekaran and Bougie, 2010). According to Sekaran and Bougie (2010: 210) it is significant to pre-test a questionnaire to establish whether it is clearly understood by the respondents or not. The questionnaire for this study was pre-tested using five respondents from another higher education institution. There were no changes made to the original instrument since positive feedback was received.

Data Analysis

Data were coded, captured and analysed using SPSS23.0 version. Frequency distribution was performed for all the categorical variables. Chi-squared test of association was conducted to determine association between two categorical variables. P-values<0.05 was considered statistically significant.

RESULTS AND DISCUSSION

The total of 401 hard copy questionnaires were distributed and 368 respondents attempted and completed the questionnaire. However two questionnaires were declared spoiled

because of unjustifiable defects discovered hence 366 were completed.

Demographic Information

The study questionnaire was designed to capture the following profiles of the respondents: gender, age, ethnic group, current level of study, faculty registered under and family back ground. Table 1 indicates that the majority (54.4%) of respondents were female. Most of the respondents were between the ages of 19-21 years. In terms of ethnic groups, the frequency shows that Africans formed the majority of the respondents at 80.0% and Coloureds were the minority at 3%. In terms of level of study, results show that the majority of respondents are at the second level, and D Tech was the least to be represented. The Faculty distribution discloses that the most represented faculty was Management Sciences with 129 students. Health Sciences was the least represented with 114 students. Table 1 also showed that a majority of 221 respondents had no experience of family business, and prior experience could represent mature students.

Although African students are the most presented in this study, Table 2 proved that some students from other race groups also have no family business experience. However, according to Raposo and Paco (2011) family experience is not a major problem because entrepreneurship is not generic but a discipline that can be learned. It was necessary to analyse and categorize family business with each ethnic group in Table 2 It was discovered that out of the 293 Africans that responded in the survey, a minority of 103 have family business experience. This finding is in line with an eNCA report which stated that only 3% of South Africa's economy is black-owned (eNCA, 2015). Out of a total of 11 Coloureds only 3 have experience; of the 21 Whites a majority of 13 have experience and of the 41 Indians a majority of 26 have family experience. Based on the ratio tabulated in Table 2 it can therefore be confirmed that Indian and White students were more exposed to entrepreneurship then Africans and Coloureds. These students are more likely to choose entrepreneurship as a career because family background has a significant influence on youth. In view of Table 2 a test of ($p=0.001$) showed a significant association between family background and ethnic groups.

Variables		n	%
Gender	Male	167	45.6%
	Female	199	54.4%
Age group	19-21	164	44.8%
	22-24	143	39.1%
	25 and above	59	16.1%
Race	African	293	80.1%
	Coloured	11	3.0%
	White	21	5.7%
Year of study	Indian	41	11.2%
	2nd Year	146	39.9%
	3rd Year	123	33.6%
	B-Tech	77	21.0%
Faculty	M-Tech	16	4.4%
	D-Tech	4	1.1%
	Applied Sciences	123	33.6%
	Health Sciences	114	31.1%
Have an experience of family business	Management Sciences	129	35.2%
	Yes	145	39.6%
	No	221	60.4%

Have business experience	Ethnic group				Chi-squared value, p-value
	African	Coloured	White	Indian	
Yes	103	3	13	26	17.208, 0.001
No	190	8	8	15	

In terms of influencing factors it is noted that personality can be the highest determinant, while motivational factors are key factors and contextual factors are perceived to impede or encourage youth career desires. This theory is confirmed by Rasli et al. (2013) who proposed that a university environment and structural support from the society are two predictors of students' entrepreneurial intention. Ahmed et al. (2012) found different stimuli *viz.* personality, planned behaviour, impact of education and gender therefore objective one explored these theories. Table 3 revealed that being an entrepreneur described achievement for 59.3% of students. This is confirmed by Remeikene et al. (2013) who emphasised that the need for achievement is one of the pointers indicating whether a person is motivated to be an entrepreneur or not. The minority of 24.6% of students disagreed which means their achievement is independent to their business ownership intention. The evidence presented by Table 3 confirmed that the majority of students felt that business ownership allows independency, a feeling that concurs with a study conducted at Botswana University. Abbas (2013) found that female students in Botswana possess a desire for independency; they perceive that owning a business gives them a break from workplace monotony.

While observing a positive perception from the same table, there were a few individuals who feel that business is too risky and that they are scared to fail. This feeling is in line with Sanchez (2011) observation which stated that the main factors for entrepreneurship are personality traits which are measured by risk tolerance. It is noted that 24.9% of students did not know whether starting a business is risky or not, this gives a clear indication that the target population has 91 students who have not identified their personalities.

Statements	Agree	Disagree	Don't know
Being an entrepreneur describes my achievement	59.3%	24.6%	16.1%
I desire business ownership because it allows independency	61.5%	24.6%	13.9%
I will not start business it is too risky and I am scared of failing	13.1%	62.0%	24.9%

Motivational factors as key stimuli were explored in Table 4. Youth is motivated by money and demotivated by a lack of appropriate job opportunities. These factors stimulate their entrepreneurship desires therefore motivation plays a big role in influencing individuals.

When respondents were asked to rate if unemployment, desire for money and job creation stimulates their desires, the majority (67.5%, 71.3% and 65.3%) felt that these factors do stimulate their entrepreneurial desires. This is parallel to the study conducted by Rametse and Huq (2014) of Botswana students who revealed that their business ownership is inspired by a desire to make money and create jobs. Udeorah and Ogana (2014) confirmed this by stating that entrepreneurship reduces unemployment and poverty among the youth. Akhter and Sumi (2014) confirmed the statements above by studying a Bangladesh community where they found that this

community has been forced by poverty to start their own businesses and that SMEs lead job creation as per Global Business School network of 2013. It is asserted that monetary value and status steers these students to desire entrepreneurship because it improves their economic standing and their status in the eyes of the society. Their opinion is supported by Thresi and Hamadi (2013) who stated that monetary value provides freedom.

Statements	Agree	Disagree	Don't know
Desire for money and higher social status stimulate entrepreneurship	67.5%	20.5%	12.0%
Unemployment and lack of appropriate job opportunities stimulate entrepreneurship	71.3%	13.1%	15.6%
Job creation stimulate entrepreneurship	65.3%	9.3%	25.4%

Table 5 reveals that government financial support has a significant power of 57.1% to promote business ownership. These results are supported by Wongnaa and Seyram (2014) who found that students who have access to finance are more likely to graduate as entrepreneurs. In view of the findings the majority is conscious of government finance support and they feel that the support is helpful. Their opinion is factual because the South African government offers great support to young entrepreneurs with their 10 year vision for Accelerated and Shared Growth Initiative of South Africa (Nicolaides, 2011). Social networks were found to have a significant influence as expressed by 180 respondents as presented in Table 4. This is a realistic view from students because usage of technology has increased and social networks are central actors of formal and informal ties (Abir et al., 2014). This concurs with views of Bizri et al. (2012) who stated that the greatest influence on entrepreneurial preference is social networks, and a lack of strong social networks may be a barrier. The lack of a strong social network is associated with 23.8% students who do not know whether government support promotes entrepreneurship or not.

Although a majority of 142 respondents feel that culture promotes entrepreneurship it is also noted that culture does not have much impact because 30.6% do not think their culture encourages them while another 30.6% do not have a view. These findings concur with Akhter and Sumi (2014) who stated a similar view in relation to women-that cultural belief has a negative influence on women in Bangladesh because they are restricted to domestic work.

Statements	Agree	Disagree	Don't know
Culture promote entrepreneurship	38.8%	30.6%	30.6%
Social networks promote business ownership	49.2%	23.5%	27.3%
Government finance support promote business ownership	57.1%	19.1%	23.8%

The results in Figure 1 revealed that 55.46% of respondents are encouraged and prepared by their current studies to become entrepreneurs. Although the majority have a positive opinion about current studies encouraging and preparing them to be entrepreneurs, the margin between the two is not very great hence the results do not give a clear impact of current studies. It is vital

for a university to provide an entrepreneurship-friendly environment to encourage and foster the culture. However, the results presented in Figure 4 are justified by different studies. A different view is found from the results of a survey conducted on German students who felt that entrepreneurship education has a negative impact on them. The more they know and learn, the more they lose interest. Another differing view is found from the results of a survey conducted on Polish students who felt that their education is very influential hence they are looking forward to be business owners when they graduate (Packham et al., 2010). These different feelings are reasoned by Lee et al. (2005) who asserted that education separates entrepreneurs and non-entrepreneurs because it provides individuals with in-depth knowledge about a particular subject.

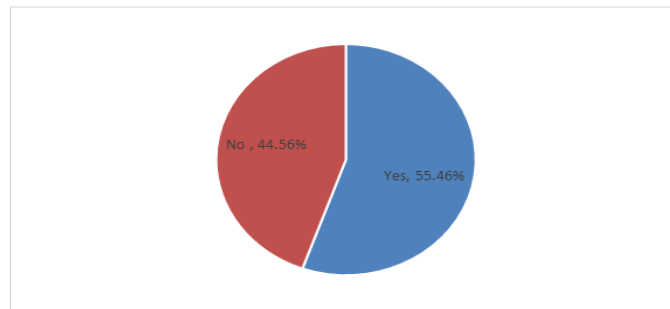


FIGURE 1
INFLUENCE OF CURRENT STUDIES

In view of the findings the majority of respondents are encouraged and prepared by their current studies to become entrepreneurs. It became necessary to analyse these results further to have a deeper understanding when each faculty is taken into consideration. Hence cross-tabulation between current studies has an impact and the faculty was computed. The results displayed in Table 6 clearly indicate that students from Applied Sciences were not encouraged by their current studies. Management Sciences is the faculty that encouraged their students the most and respondents indicated that they feel prepared to be business owners. Initially it appeared that 55.46% of current students feel prepared for entrepreneurship however, it became clear that some faculties have more influence than others. As results showed different opinions between faculties it became necessary to note a suggestion by Kostoglou and Siakas (2012) who proposed that entrepreneurship education has to be entrenched in all disciplines. The results presented in Table 6, a test of ($p=0.114$), showed no relationship between two variables cross-tabulated.

Table 6				
CROSS-TABULATION BETWEEN CURRENT STUDIES EFFECT AND FACULTY REGISTERED UNDER (n=366)				
Current studies encourage and prepare to be an entrepreneur	Faculty			Chi-squared value, p-value
	Applied Sciences	Health Sciences	Management Sciences	
Yes	31.0%	29.1%	39.9%	4.336, 0.114
No	36.8%	33.7%	29.4%	

The results in Figure 2 revealed that a minority of 33.61% students felt the desire to be

business owners after studying at DUT. This lower percentage conforms to the findings in Figure 4.1 where the margin between the two is not very great. These findings are in line with views of Van Aardt and van Aardt (2011) which identified that lecturers with no industry experience may hinder students' entrepreneurial intentions. The latter statement is supported by Global Business Network (2013) that identified the poor quality of higher education where students are not exposed to interactive lectures where they cultivate their thinking and decision-making skills.

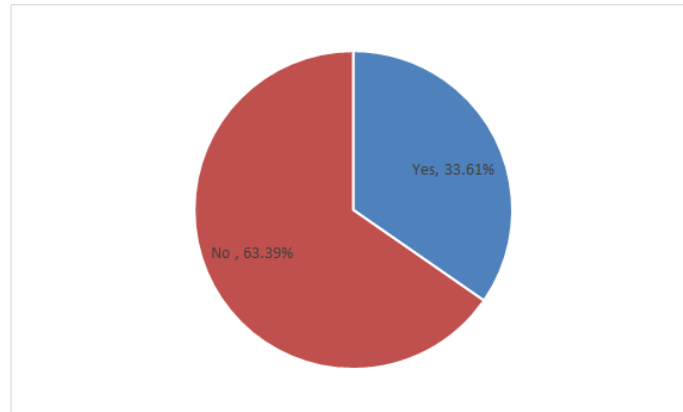


FIGURE 2
AFTER EFFECT OF CURRENT STUDIES

The minority of respondents felt the desire for entrepreneurship after studying at DUT, a further cross-tabulation was performed when the current level of study is considered and the results are shown in Table 7 to give a deeper understanding. In terms of the minority of 33.61% who revealed that desire for entrepreneurship happened after studying at DUT, the second level students are shown to be more encouraged. It was asserted that 1st level education does encourage students to be business owners but the interest deteriorates as they proceed to the following levels of study. This hypothesis is confirmed by the results in Table 7, as by the time students reach B-Tech level their feelings have completely changed as compared to when they were at a 2nd level. These results are no different to other previous studies as they are consistent with the views of Nabi et al. (2010) who stated that education has a tendency of changing a person's thinking, as characteristics of a certain matter unfolds.

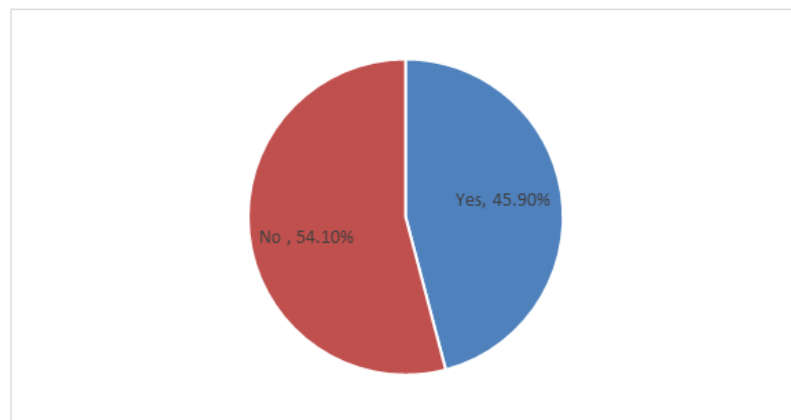
Desire for entrepreneurship happened after studying at DUT	Current level of study				
	2nd Year	3rd Year	B-Tech	M-Tech	D-Tech
Yes	41.5%	38.2%	19.5%	0.8%	0.0%
No	39.1%	31.3%	21.8%	6.2%	1.6%

In Table 8 females are found to be more positively impacted by DUT's education than males. Female students revealed that their desire to be business owners happened after studying at DUT. These results are relevant to the statement of Rasli et al. (2013) who stated that women are dependent on higher education because they get no support from society, as men are automatically given a full role in the economy while women are restricted to domestic work.

Although female students at DUT are positively impacted by the current curriculum it became evident that the curriculum has a positive impact on both genders, as the difference between genders is not that great. These findings concur with different views of different researchers about gender and entrepreneurship, Ghazali et al. (2013) asserted that female students have a higher attitude to succeed when compared to males. While Peng et al. (2012) found males at Kumasi Polytechnic in Ghana to have more willingness to graduate as entrepreneurs. The chi-squared test presented in Table 8 shows no association between the after-effect of current studies and gender.

Desire for entrepreneurship happened after studying at DUT	Gender		Chi –Squared value, p-value
	Male	Female	
Yes	53	70	0.481, 0.488
No	114	129	

The findings in Figure 3 discovered that a minority of 45.90% students were aware of graduate entrepreneurship prior to studying at DUT. It is important to note the pattern trend of frequencies displayed by Table 1 and Table 6. These results correspond with each other as Table 1 revealed that 221 did not have family business experience which leaves the University with a vast number of unprepared minds. It appeared that family background has the influence to prepare the minds of youngsters prior to receiving higher education knowledge. These results are similar to the views of Peng et al. (2012) who stated that family influence plays a huge role in moulding young minds. Raposo and Paco (2011) pointed out that an unprepared mind should not to be an obstacle because they believed that education is a model for changing attitudes and motives. Entrepreneurship is neither magic nor generic therefore entrepreneurs are developed through effective education.



**FIGURE 3
PRIOR ENTREPRENEURIAL KNOWLEDGE**

The Influence of University Life on Students' Desires towards Entrepreneurship

The questions asked the respondents to reveal whether they are aware of the university's infrastructures and they were also channeled to name them. In the results in Figure 4 it was evident that a majority of 86.89% participants were not aware of the university's entrepreneurial support infrastructures hence they are unable to name at least one. It is noted that from 13.11% that were aware of this, only 9 out of 47 were able to name a minimum of one support infrastructure or club of which they are aware. The university currently has initiatives to support and encourage students as discussed in the literature review, this initiative concurs with views of Nicolaides (2001) who stated that a university is a hub that incorporates all features necessary to cultivate young minds. The respondents who were found to be aware of support infrastructures and clubs were channelled to name those structures. Nine respondents who responded to this particular question named: Business Studies Unit, HIV, Tabeisa, Chiropractic, Somatology, SCO, Rendezvous restaurant, Hotel School restaurant, and EMC Techmed unit. Among these respondents 4 were from Applied Sciences, 1 from Health Sciences and another 4 from Management Sciences. Applied Sciences was the most represented and Health Science was the least represented.

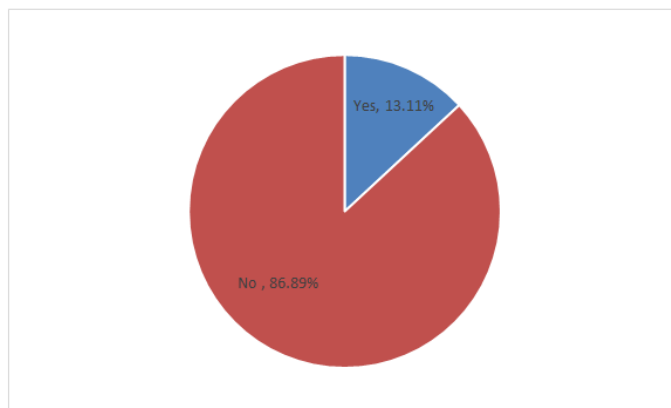


FIGURE 4
AWARENESS AND VISIBILITY OF INFRASTRUCTURES OR CLUBS

Results found in Figure 4 revealed that 13.11% of students were aware of clubs or infrastructures that encourage them to become entrepreneurs. It was then necessary to evaluate the effectiveness of these support structures. The results in Figure 5 discovered that a majority of 77.05% found these infrastructures not to be beneficial and encouraging to them. These results in Figure 5 correspond with 86.89% of students who revealed that they were not aware of the university's entrepreneurial infrastructures. The idea of effective support infrastructures is reinforced by Fayolle and Gailly (2015) who stated that a positive image of entrepreneurship within a university campus encourages students.

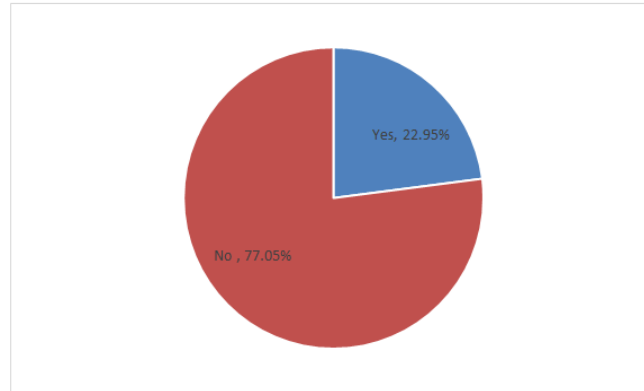


FIGURE 5
INFLUENCE OF INFRASTRUCTURES AND CLUBS

It became important to know the career paths that students intend to follow. The respondents were asked to reveal their desired career path. The results presented in Figure 6 revealed that a majority of 63.11% desired to be entrepreneurs. These results concur with the views of Masi (2007) who emphasised that education is not the only factor that makes an entrepreneur but other elements like self-confidence and the ability to take risks makes an entrepreneur.

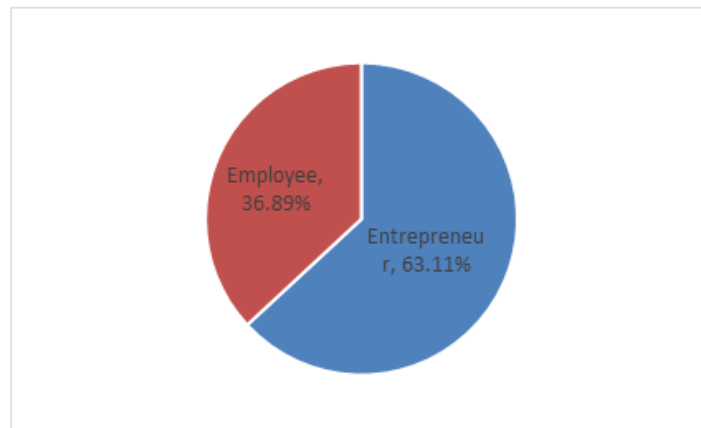


FIGURE 6
DESIRED POSTGRADUATE CAREER CHOICES

In view of the majority of respondents that aspire to be entrepreneurs, it became necessary to further analyze this so as to gain a deeper understanding as to whether gender is taken into consideration. Figure 7 discovered the following: in the 63.11% of respondents that aspire to be entrepreneurs, a majority of 123 are females. These results further clarified that out of 36.89% of respondents that are not interested in business ownership a majority of 76 were females. These findings are in line with Ghazali et al. (2012) who revealed that female students have a higher entrepreneurial attitude. However it is noted that the results presented in Figure 7 are different to results found by Wongnaa and Seyram (2014) who found that a majority of male students at

Kumasi Polytechnic in Ghana have a desire for business ownership. The outcome presented in Figure 7 confirmed that both genders have similar desires because the margin between the two groups is not very significant.

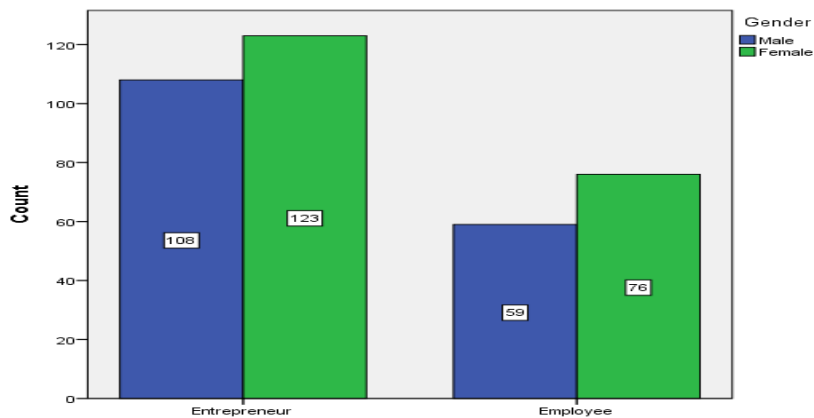


FIGURE 7
DESIRED POSTGRADUATE CAREER CHOICES IN RELATION TO GENDER

CONCLUSION

Entrepreneurship is a factor that gives students a different way of looking at the world, irrespective of whether they choose to develop their own business or not. The main purpose of the study was to conduct a formal assessment of the impact of higher education on entrepreneurial intentions on DUT students. The study examined the impact of education and other external factors that contribute to shaping students' intentions. The analyses discovered that primarily social external factors have a positive influence more than education and university life. However, these social external influences are based on students' perceptions not on the actual reality of business education. The implication is that students should be nurtured to make sustainable decisions.

RECOMMENDATIONS

The following are recommended based on the finding of the study:

- 1) Professional education support is an identified method to obtain knowledge about business ownership. Effective education teaches, nurtures, supports and enhances students' entrepreneurship desires because learning is a process. DUT has to be practically oriented by intensifying entrepreneurial education. This can be achieved by executing the following.
- 2) To revise the curriculum and course delivery so that that it includes entrepreneurial modules across all faculties because the results indicated that students from business studies related courses are more encouraged by current studies to become business owners than those in other disciplines.
- 3) There is a need to develop curricula that develop the spirit and culture of business ownership in the youth from both lecturers and learners as some students disagree that entrepreneurship creates jobs and combats unemployment.
- 4) DUT has to increase its partnership with employers because in-service programmes enhance students' awareness of entrepreneurial opportunities. Practical experience is likely to provide a fuller picture as the results show that personality, motivational and contextual factors have a positive impact on DUT students' decisions to become graduate entrepreneurs. Students will therefore be aware of the responsibility that comes with having their own business.

LIMITATIONS OF THIS STUDY

The sample size limits generalization because the study focused on three faculties of DUT students, therefore the results may neither be generalized across the entire university nor all of South Africa's polytechnics. However, the results found can form a basis for further studies to cover all faculties because the study has ascertained that there is a need for change and improvement. Administering of the questionnaires might cause weakness to the results: respondents are likely to have responded without giving their answer much thought due to time constraints as the questionnaires were distributed by the researcher who then waited for the respondents to complete the survey and then collected them. This limitation can be avoided by involving lecturers in the process of developing entrepreneurs hence they would be more tolerant and supportive and not seem impatient during the process of data collection.

REFERENCES

- Abbas, N.L. (2013). Engineering students: what factors affect their entrepreneurial intention? *Journal of Humanities and Social Science*, 15(2), 35-40.
- Abir, S., Harrasi-Al., Eyad, B., Zadjali-Al., Zahran, S., & Salti-Al. (2014). Factors impacting entrepreneurial intention: A literature review. *International Journal of Social, Education, Economics and Management Engineering*, 8(8), 2442-2444.
- Ahmed, I., Nawaz, M.M., & Ramzan, M. (2012). Do external factors influence students' entrepreneurial inclination? An evidence based approach. Retrieved from www.intechopen.com
- Akanwa, P.U., & Akpanabia, N.H. (2013). Entrepreneurship development as a panacea for unemployment reduction in Nigeria. *RIJ SER*, 6(2), 82-96.
- Akhter, R., & Sumi, F.R. (2014). Socio-cultural factors influencing entrepreneurial activities: A study on Bangladesh. *Journal of Business and Management*, 16(9), 01-10.
- Arenius, P., & Minniti, M. (2005). Perceptual variables and nascent entrepreneurship. *Small Business Economics*, 24(3), 233-247.
- Bawuah, K., Buame, S., & Hinson, R. (2006). Reflections on entrepreneurship education in African tertiary education. *Independent Research Journal in the Management Sciences*, 6(1), 1-6.
- Bizri, R.M., Kojak, A., Dani, A., Mokahal, M., & Bakri, M. (2012). Barriers to entrepreneurship endeavours in a developing economy. *World Journal of Social Sciences*, 5(6), 79-100.
- Entangled, M.B. (2013). entrepreneurship development. Best partner in solving problems debt and entrepreneurship development. Retrieved from <http://www.pinedakrch.blogspot.com>
- Ertuna, Z., & Gurel, E. (2011). The moderating role of higher education on entrepreneurship. *Education & Training*, 53(5), 387-402.
- Fayolle, A., & Gailly, B. (2015). The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. *Journal of Small Business Management*, 53(1), 75-93.
- Ghazali, Z., Ibrahim, N.A., & Zainol, F.A. (2013). Factors affecting entrepreneurial intention among UniSZA students, 9(1), 85-93.
- Global business school network. (2013). Education, employment & entrepreneurship: A snapshot of the global jobs challenge. Retrieved from www.gsbonline.org/2013
- Graevenitz, V.G., Harhoff, D., & Weber, R. (2010). The effects of entrepreneurship education. *Journal of Economic Behaviour & Organization*, 76(1), 90-112.
- Gwija, S.A., Eke, C.E., & Iwu, C.G. (2014). Challenges and prospects of youth entrepreneurship development in a designated community in the Western Cape, South Africa. *Journal of economics and Behavioural Studies*, 6(1), 10-20.
- Hamidi, D.Y., Wennberg, K., & Berglund, H. (2008). Creativity in entrepreneurship education. *Journal of small business and enterprise development*, 15, 304-320.
- Hattab, H.W. (2014). Impact of entrepreneurship education on entrepreneurial intentions of University students in Egypt: *The Journal of Entrepreneurship*, 23(1), 1-18.
- Heinnovate, S. (2014). The entrepreneurial higher education institution: A review of the concept and its relevance today. Retrieved from www.heinnovate.eu

- Hisrich, D.R., & Kearney, C. (2014). *Managing innovation and entrepreneurship*. California. SAGE Publications Inc.
- Hinson, R. (2004). *The role of ministry of private sector development in entrepreneurship refereed conference proceedings*. ISBA 27th National Conference Entrepreneurship & SME Development: Newcastle-Gateshead, UK.
- Jorge-Moreno, D., Castillo, L.L., & Triguero, M.S. (2012). The effect of business and economics education programs on student's entrepreneurial intention. *European Journal of Training and Development*, 36(4), 409-425.
- Kigotho, W. (2015). Producing unemployable graduates wastes time and money. *University world news*, 359, 1-3.
- Koe, W.L., Sa'ari, J.R., Majid, I.A., & Ismail, K. (2012). Determinants of entrepreneurial intention among millennial generation. *Social and Behavioural Sciences*, 40, 197- 208.
- Kostoglou, V., & Siakas E. (2012). Investing higher education graduates' entrepreneurship in Greece. Retrieved from <http://creativecommons.org/licences/by-nc/3.0/>
- Kuratko, D.F., Morris, M.H., & Covin, G.J. (2011). *Corporate Innovation & Entrepreneurship*, 3rd ed. Canada. Nelson Education Ltd.
- Lanero, A., Vazquez, J., Gutierrez, P., & Purification G.M. (2011). The impact of entrepreneurship education in European universities: an intention –based approach analyzed in the Spanish area. *International review on public and non-profit marketing*, 8(2), 111-130.
- Lee, S.M., Chang, D., & Lim, S.B. (2005). Impact of entrepreneurship Education: A comparative study of the US and Korea. *International Entrepreneurship and Management Journal*, 1, 27-43.
- Lorz, M., Muller, S., & Volery, T. (2011). Entrepreneurship Education: A meta-analysis of impact studies and applied methodologies. *In conference paper, FGF G-Forum 2011*.
- Masi, P.D. (2007). *Defining entrepreneurship*. Retrieved from <http://www.gdrc.org/icm>
- Matlay, H. (2008). The impact of entrepreneurship education on entrepreneurial outcomes. *Journal of Small Business and Enterprise Development*, 15(2), 382-396.
- Nabi, G., Holden, R., & Walmsley, A. (2006). Graduate career-making and business start-up: A literature review. *Education and Training*, 48(5), 373-385.
- Nabi, G., Holden, R., & Walmsley, A. (2010). From student to entrepreneur: Towards a model of graduate entrepreneurial career making. *Journal of Education and Work*, 23(5), 389-415.
- Nicolaides, A. (2011). Entrepreneurship-the role of higher education in South Africa. *International Educational research*, 2(4), 1043-1050.
- Onu, A.J.C. (2013). Stimulating entrepreneurship in educational institutions in Nigeria. *European scientific journal*, 9(25), 38-46.
- Osemeke, M. (2012). Entrepreneurial development and interventionist agencies in Nigeria. *International journal of business and social science*, 3(8), 255-265.
- Packham, G., Jones, P., Miller, C., Pickernell, D., & Brychan, T. (2010). Attitudes towards entrepreneurship education: A comparative analysis. *Education and training*, 52(8/9), 568-586.
- Peng, Z., Lu, G., & Kang, H. (2012). Entrepreneurial intentions and its influencing factors. A survey of the university students in Xi'an China. *Scientific Research*, 3, 95-100.
- Rametse, N., & Huq, A. (2014). Factors influencing attitudes of woman students to business ownership: Lessons and experiences from University of Botswana. *International Review of Business Research Papers*, 10(1), 109-125.
- Raposo, M., & Paco, A. (2011). Entrepreneurship education: Relationship between education and entrepreneurial activity. *Psicothema*, 23(3), 453-457.
- Rasli, M.A., Khan, R.S., Malekifar, S., & Jabeen, S. (2013). Factors affecting entrepreneurial intention among graduate students of university Teknologi Malaysia. *International Journal of Business and Social Science*, 4(2), 182-187.
- Remeikiene, R., Startiene, G., & Dumciuviene D. (2013). *Explaining entrepreneurial intention of university students: The Role of Entrepreneurial Education*. International Conference 19-21 June 2013.
- Sanchez, J.C. (2011). University training for entrepreneurial competencies: its impact on intention of venture creation. *International Entrepreneurial Management Journal*, 7, 239-254.
- Sekaran, U., & Bougie, R. (2010). *Research methods for business. A Skill Building Approach*, 5th ed. Wiley, Chichester.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25(1), 217-226.

- Taatila, V. P. (2010). Learning entrepreneurship in higher education. *Education and Training*, 52(1), 48-61.
- Thresi, A.V., & Hamadi, F. (2013). What young presume about entrepreneurship? A case of university students in Oman. *ASBBS Annual Conference: Las Vegas*, 20(1), 756-773.
- Turker, D., & Selcuk, S.S. (2009). Which factors affect entrepreneurial intention of university students? *Journal of European Industrial Training*, 33(2), 142-159.
- Udeorah, K.E., & Ogana, M. (2014). Influence of entrepreneurship development on unemployment reduction in Nigeria. *International Journal of Youth Empowerment and Entrepreneurship Development*, 1(1), 82-96.
- Van Aardt, I., & Van Aardt, C. (2011). A review of entrepreneurship training and the youth unemployment in South Africa. *Entrepreneurship, training, education and job creation*, 1st ed. Johannesburg: SUN MeDIA Metro.
- Williams, E. (2011). *The global entrepreneur: how to create maximum personal wealth in the new global economic era*. Bloomington: iUniverse.
- Wilson, J. (2014). *Essentials of business research*, 2nd ed. London. SAGE publications.
- Wilson, F., Kickul, J., & Marlino, D. (2007). Gender, Entrepreneurial Self-Efficacy, and Entrepreneurial Career Intentions: Implications for Entrepreneurship Education. *Entrepreneurship Theory and Practice*, 31(3), 387-406.
- Wongnaa, C.A., & Seyram, A.Z.K. (2014). Factors influencing polytechnic student's decision to graduate as entrepreneurs. *Journal of Global Entrepreneurship Research*, 2(2), 1-13.
- Wu, S., & Wu, L. (2008). The impact of higher education on entrepreneurial intentions of university students in China. *Journal of Small Business and Enterprise Development*, 15, 752- 774.
- Zegeye, B. (2013). Factors explaining students' inclination towards entrepreneurship: Empirical study of Ethiopian University Students. *Journal of Emerging Issues in economics, Finance and Banking*, 1(4), 302-320.