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# Attitudes of Academics towards Mandatory Inclusion of Entrepreneurship within Academic Programmes, a South African Case-Study

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**Abstract**

Youth unemployment, especially among graduates, continues to be widespread nationally and internationally. Minimal research is reported on the role of academics as change agents to drive and instil entrepreneurial spirit among students. This article reports on a survey done in South African institutions of higher education about the attitudes of academics to the inclusion of entrepreneurial programmes as mandatory in an academic setting. The difficult situation in which university staff find themselves currently, balancing the three roles university institutions are expecting of them, namely teacher, researcher, community worker, has an impact on their attitudes to change. With the appropriate didactic approach to entrepreneurship, students' entrepreneurial orientation is likely to be enhanced. For this article, a mixed method, i.e. in-depth desktop documentary analysis and semi-structured questionnaire was used to collect data from 161 purposively sampled respondents. ANOVAs and *post hoc* multiple comparison of means tests revealed that gender, education level and age are significant in shaping the interest lecturers have in entrepreneurial programmes for their students. Demographic data of respondents differed significantly in terms of their attitudes towards the importance of entrepreneurial orientation and their abilities to transfer vital entrepreneurial competencies to students. Seventy eight percent of respondents were in favour of a much stronger presence of entrepreneurial emphasis across academic programmes, with 52% in support of it being mandatory. Interactive, problem- and project-based, simulations, and modelling were viewed as the most effective didactical strategies by academics to foster and inculcate entrepreneurial spirit amongst students. This research may be used not only to inform curriculum development policies on didactic approaches to be applied to subjects such as entrepreneurship at the universities, but also help to convert academics into entrepreneurial advocates.

***Key phrases***

*Academic programmes; academic staff; didactic approaches; entrepreneurial orientation (EO) and mandatory entrepreneurship education*

# 1. INTRODUCTION

Chimucheka (2014:403) reports that South Africa has a very high unemployment rate, low economic growth and a dismal Total Entrepreneurial Activity (TEA) (Swanepoel, Strydom & Nieuwenhuizen 2010:58; Von Broembsen, Wood & Herrington 2005:36). In his address to the 2017 Global Entrepreneurship Congress (GEC) the then deputy President of South Africa, Mr. Cyril Ramaphosa stated that there was much more to be done in the current situation. Entrepreneurship, he said, should be part of the school curriculum, so that young people, from an early age, could be encouraged to be problem solvers. He suggested that this inclusion would also ensure that more job creators, rather than job seekers, were developed and that entrepreneurship would be seen as a viable career (Okechukwu 2018). South Africa, like many developing countries continues to grapple with increasing levels of unemployment, especially among young people, including university graduates. According to the International Labour Organisation (ILO) in 2016, total global unemployment stood at 197.1 million, higher than the pre-crisis level of 2007. The same report reveals its findings relating to young people: “after a number of years of improvement, youth unemployment is set to rise in 2016 and young people are disproportionately affected by working poverty - and if you are a young woman your chances of finding a quality job are even less likely” (ILO 2016:63). However, the first quarter of 2018 statistics released by Statistics South Africa (Stats SA) indicates that the unemployment rate among young people aged 15-34 is 38,2%, implying that more than one in every three young persons in the labour force does not have a job (Stats SA 2018:7). Many of these young people have become discouraged about being employed in the labour market and are also not building on their skills base through education and training (NEET, i.e. ‘Not in Education, Employment or Training, Stats SA, 2018). Fatoki and Chindoga (2011) construe that young people in South Africa aged between 14 and 35 years are far less likely to start their own businesses compared to those in other countries. See Figure 1 for the South African Youth Unemployment 2013-2017 rate.

**Figure 1: South Africa Youth Unemployment Rate 2013 - 2017**


Source: www. Tradingeconomics.com: Statistics South Africa (2017)

The desktop research undertaken for the research which underpins this article among a number of South African institutions of higher education shows that very few, if any, have entrepreneurship as a compulsory module in their undergraduate programme offerings. Entrepreneurial education is relegated to the periphery. The situation reflects the circumstances of universities and technikons worldwide (Rüegg 2011). Shin and Teichler (2014), reporting on the modern post-massified higher education institutions which are struggling to balance the three functions assigned to them, namely, teaching, research and service, suggest that there should be a scholarly discourse on the matter which is realistic and idealistic. South African universities are far behind international ones in which the discourse is about post-massification. In South Africa as the process of massification has only begun relatively recently (Mohamedbhai 2014), the discourse is limited. For many participants on every level in higher education the narrowing down of the social purposes of higher education is a matter which needs its own vigorous discourse (Maassen & Olsen 2007). Staff at South African institutions of higher education is generally finding the huge number of students who are under-prepared a challenge to their teaching skills; the demand for research outputs and community work are stressful; solutions to the difficulties are not easily borrowed from the global community (Altbach, Reisberg & Rumbley 2009). In such a context staff at universities may find that their roles that were originally conceived as

discipline experts, who lecture on their discipline to students, are being transformed in ways which they had not anticipated. A more sophisticated and nuanced understanding of the roles, the constraints placed on and expectations of academic staff nationally is required (Webbstock & Sehoole 2016).

Radipere (2012) found that the growing interest in entrepreneurship education contributed to an increased demand for entrepreneurship courses from students who are interested in starting businesses. Odora and Naong (2014) reported that 53% of the students from Technical and Vocational Education and Training Colleges (TVET) did not feel sufficiently equipped, ready and confident to start their own businesses after graduation. While society in general tends to decry government for failure to deal with youth unemployment (Peter 2018; Yu 2017), schools, colleges and universities are inherently entrusted with the role of change agents for the general good of the public. A plethora of documentary evidence continues to show that entrepreneurship and entrepreneurs are key contributors to job growth, innovation and the shaping of communities (Acs 2006; Naudé 2010; Okechukwu 2018; Radipere 2012; Zimmerer & Scarborough 2008).

Mitchelmore and Rowley (2010) state that entrepreneurial development activities also include those which make the field of entrepreneurship attractive to non-entrepreneurs. Although entrepreneurial orientation may be achieved through various means, examples of which are (i) structured institutional building programmes, (ii) efficient educational systems, (iii) availability of adequate, efficient, functional and accessible infrastructures, (iv) easy access to financial support, etc., (Ogbo & Agu 2012), academics at universities and colleges remain key drivers in stimulating and fostering entrepreneurial spirit among students. Further, the design of academic programmes that are capable of contributing to entrepreneurial likelihood and entrepreneurial culture is fundamental, as well as providing students with the necessary tools for new business creation (Moriano, Gorgievski, Laguna, Stephan & Zarafshani 2011). In their study, Mathews & Moser (1995) reported a significant relationship between the presence of parental role models and entrepreneurial intentions. Entrepreneurship education is regarded as a form of training in entrepreneurial knowledge, behaviour, attitudes and skills a vital vehicle to engender a new radical entrepreneurship culture amongst young people (Pulka, Rikwentishe & Ibrahim 2014). In this article an attempt is made to examine the attitudes of academic staff of universities (with the majority from

universities of technology) in SA towards the mandatory inclusion of entrepreneurship modules across various disciplines.

## 2. ENTREPRENEURIAL ORIENTATION

The concept of entrepreneurial orientation is often employed to explain ones' tendency to have an entrepreneurial attitude and behaviour (Nyoman & Ni Wayan 2016:46). Lumpkin and Dess (1996) maintain that Entrepreneurial Orientation (EO) refers to processes, practices, and decision-making activities that lead to new entry. It involves the intentions and actions of key players functioning in a dynamic generative process aimed at new-venture creation. The key dimensions that characterise an EO include propensity to act autonomously, willingness to innovative and take risks, and tendency to be aggressive towards competitors and proactive relative to marketplace opportunity (Lumpkin & Dess 1996:136). Closely linked to Lumpkin and Dess' (1996) concept of entrepreneurial orientation is Krueger and Brazeals' (1994) concept of entrepreneurial potential, which they describe as a basic capacity and willingness to become an entrepreneur.

Koe (2016) maintains that many existing studies have recognised the role of entrepreneurship education in developing entrepreneurial intention (Farashah 2013; Kuehn 2008). Entrepreneurship education is important in building up university students' personal entrepreneurial skills and equipping them with the required entrepreneurial competencies, such as innovativeness and risk-taking (Ferreira, Raposo, Rodrigues, Dinis & do Paco 2012). Unfortunately, the concept of individual entrepreneurial orientation (IEO), especially for academics at universities and colleges, which views risk-taking, pro-activeness and innovativeness as entrepreneurial competencies has not been fully scrutinised in entrepreneurial intention studies. EO has been widely recognised by researchers as a firm-level construct that determines a firm's performance (Chandrakumara, Zoysa & Manawaduge 2011; Grande, Madsen & Borch 2011; Gupta & Gupta 2015; Hafeez, Chaudhry, Siddiqui & Rehman 2011). In recent years, researchers have suggested that EO can also be regarded as an individual-level construct (Robinson & Stubberud 2014). Such a suggestion has given new room to researchers to investigate EO from a new level and perspective. Current studies by researchers who examined individual entrepreneurial orientation (IEO) agreed that IEO is a multi-dimensional construct and it consists of elements similar to firm-level EO. For example, Taiwanese franchisees' IEO

was found to be positively related to business performance (Chien 2014). A relationship between IEO and business success was also proven by Bolton (2012).

According to Miller (2011), entrepreneurship orientation is a performance driven concept comprising a firm's risk taking, innovativeness and pro-activeness behaviours. Ndofirepi and Rambe (2016:1340) maintain that apart from the antecedents of this concept, scholars have also investigated the outcome of entrepreneurship orientation (Schwab & Sala-i-Martín 2014; Su & Sohn 2015:2; Yong & Ho 2006:147). Irrespective of its level of operation, entrepreneurship orientation has been considered to generate dynamism and change that triggers higher firm and economic performance (Su & Sohn 2015:23). Su and Sohn (2015) found that much of the extant academic research on the determinants of entrepreneurship orientation has targeted the influence of individual traits, demographic and socio–economic variables on entrepreneurship orientation of firms or entrepreneurs (Lin & Envick 2013:465-482; Ndofirepi & Rambe 2016:1333; Runyan, Ge, Dong & Swinney 2012:819-836; Sajilan, Hadi & Tehseen 2015:36). In their endeavours to cultivate EO and to inspire their students, academics ought to first appreciate and comprehend their students' entrepreneurial intentions. Wu and Wu (2008) state that recently the entrepreneurial intentions of university students have received considerable interest among researchers such as (Ndofirepi & Rambe 2016; Odora & Naong 2014; Radipere 2012; Veciana, Aponte & Urbano 2005).

Research continues to show documentary evidence that entrepreneurs are cultivated during their lifetime, and education is very important to build entrepreneurship in peoples' minds (Lee, Lim, Pathak, Chang & Li 2006). Because educational background is a key demographic variable, it is often included in the analysis by these researchers (Kolvereid & Isaksen 2006; Ndofirepi & Rambe 2016; Odora & Naong 2014; Radipere 2012). Since previous work was focused on broader factors than educational background, they cannot show the relationship between educational background, university students' entrepreneurial perceptions and, through them, entrepreneurial intentions (Wu & Wu 2008). It is vital that South African academics comprehend South African students' entrepreneurial intentions and the factors affecting their intentions to effectively determine educations' mediating role. Entrepreneurial orientation is a practice that leads to new entry (Lumpkin & Dess 1996; Hughes & Morgan 2007; Vil & Bedi 2012) and the extent to which an individual student can

be entrepreneurial (Schillo 2011). It (i.e. EO) refers to personal, psychological traits, attributes, attitudes and values that are associated with an eagerness to embark on entrepreneurial activities.

## 3. FOSTERING ENTREPRENEURSHIP: EDUCATION IN PERSPECTIVE

The findings of the study by Lope Pihie & Bagheri (2011) revealed that the teachers have a positive attitude towards entrepreneurship and a high sense of self-efficacy. According to Thu and Hieu (2017:13) entrepreneurial education is the process of providing individuals with the ability to recognise commercial opportunities and the insight, self-esteem, knowledge and skills to act on them. It includes instruction in opportunity recognition, commercialising a concept, marshalling resources in the face of risk, and initiating a business venture (Jones & English 2004). Similarly, Erasmus, Loedoff, Mda and Nel (2006) add that entrepreneurship education is a structured, formal conveying of entrepreneurial competencies. These are the mastery of primary concepts, skills and mental awareness used by individuals during the process of starting and developing their growth-orientated business ventures. Many researchers (Callender 2011; Floden 2017; Wu & Wu 2008) report in the literature that the potential impact of higher education on students includes three aspects: the first is about their personal development, including changes in attitudes and values; the second is to do with changes in their abilities; and the third with possible social impacts (Wu & Wu 2008). Based on this idea, we can predict that (i) students who perceive entrepreneurship education positively are more likely to have positive attitudes towards entrepreneurship, (ii) students who perceive entrepreneurship education positively are more likely to have positive subjective norms, and (iii) students who perceive entrepreneurship education positively are more likely to have higher perceived behaviour control, and those lead to an entrepreneurial career intention of students. The comprehension of Academics regarding the above combined with their application of appropriate pedagogic strategies for entrepreneurship education programmes play a central role in triggering and promoting entrepreneurship intentions among students.

Since the 1990s the literature has emphasised the importance of entrepreneurship education (Tiago, Faria, Couto, Tiago 2015:156). It can therefore be safely argued that schools and universities have a key role to play in promoting entrepreneurship since educational

institutions are considered the ideal place in which entrepreneurial attitudes and aspirations are shaped among students while they are studying to survive in todays' robust business milieu (Autio, Keeley, Klofsten & Ulfstedt 2001). Lope Pihie and Bagheri (2011) maintain that academics' attitude toward a subject not only affects their choice to teach that subject and the quality of their instructional performance (Harlen & Holroyd 1997), but also influences students' attitudes toward the subject, their motivation to learn the subject, and their achievement (Chong, Klassen, Huan, Wong & Kates 2010). Importantly, environmental and contextual factors such as teacher education programmes can improve a positive attitude toward a particular subject among teachers (Bayraktar 2011).

Entrepreneurship education has been viewed as a means of developing entrepreneurial skills in people; skills which manifest through creative strategies, innovative tactics, the uncanny identification of trends and opportunities in the market and courageous leadership (Gerba 2012). Omoarebun (2014) asserts that universities, in this respect, should position themselves as a hub of entrepreneurship by making substantial contributions to nurturing an entrepreneurial environment. Kirkley (2017) states that Entrepreneurship Education (EE) is not a new concept. From the early 1980s in New Zealand and elsewhere, Western governments recognised that an entrepreneurial orientation could lead to economic growth, job creation, international competitiveness and technological advancement (Audretsch, Caree, van Stel & Thurik 2002; Grebel, Pyka & Hanush 2003; Jack & Anderson 1999; Ladzani & van Vuuren 2002; Vetrivel 2010). To cultivate entrepreneurial orientation especially in students, it is necessary for academics to fundamentally alter traditional strategies and teaching methods/approaches so that learning takes on new meaning for students. Herrington (2017) reported that entrepreneurial training at a higher education level remains insufficient in South Africa. The report further points out that the South African Global Entrepreneurship Monitor (GEM) report found that only 10.1% of South Africans of working age intend starting their own business in the next three years, compared to 41.6% in the other African countries that were surveyed. Even more disconcerting is that this rate of "entrepreneurial intention" has been declining in SA over the past few years. In 2013 it stood at 15.4%, while in 2010, it was 19.6% (Herrington 2017).

Nchu (2015:30) bemoans the fact that the South African education system in the past was more teacher-centred rather than learner-centred or orientated towards experimental

learning, which as a result did not prepare learners to be critical thinkers or to explore opportunities creatively (Horn 2006:120). Moodley (2016:11) on the other hand, states that the intention of the Department of Higher Education and Training in South Africa through universities etc. is to develop 'capable, well-educated and skilled citizens who are able to compete in a sustainable, diversified and knowledge intensive economy which meets the development goals' (Republic of South Africa 2016). Following in the footsteps of other African countries such has Kenya and Nigeria could help South African young people access the relevant skills, knowledge, values and attitudes needed to develop and create their own. But entrepreneurship programmes are not coordinated and often not managed well in South Africa (Gaotlhobogwe & du Toit 2018). It is for this reason that the SA higher education sector should begin the overhaul process and suggest a mandatory entrepreneurship education across disciplines. Many believe this would go far in eradicating youth unemployment (Chitunga 2017; Mariana-Cristina n.d; Naong 2011).

### 3.1 Rationale for engendering entrepreneurial spirit/culture at universities

Academics' attitude towards entrepreneurship is a mediator in the relation between the organisational factors, in this case a university and EO (Vossebeld 2015) of students. Numerous studies have demonstrated that entrepreneurship is a catalyst and a key driver towards independence, prosperity and economic growth (Naude 2010; & Odora & Naong 2014; Radipere 2012). It is common knowledge that without entrepreneurs, no economy can survive. Entrepreneurs are not born but rather made by the contingencies of their environment, one of which is socialisation which has an impact in developing the next generation of *start-ups* (Okechukwu 2018). This is confirmed by the National Content Standards for Entrepreneurship Education (2004) that wealth and a high majority of jobs are created by small businesses started by entrepreneurially minded individuals, many of whom go on to create big businesses. People exposed to entrepreneurship frequently say that they have more opportunity to exercise creative freedoms, higher self-esteem, and an overall greater sense of control over their own lives (Martin 2015:646). As a result, many experienced business people, political leaders, economists and educators believe that fostering a robust entrepreneurial culture will maximise individual and collective economic and social success on a local, national, and global scale (Martin 2015).

Lope Pihie and Bagheri (2011) assert that students' entrepreneurial motivation and competencies can be highly influenced by academics' attitudes toward and self-efficacy in entrepreneurship. Universities as a critical component of the entrepreneurial eco-system are becoming more entrepreneurial and intend addressing this national imperative affecting young people and future entrepreneurs. The increased demand to transfer knowledge stimulated universities to undertake entrepreneurial activities (Yusof & Jain 2010:87). Being entrepreneurial in a university context includes for example knowledge spill over, renewing teaching methods and commercialising knowledge. Some examples of universities which makes entrepreneurship one of their main long-term goals includes University of Twente in the Netherlands, the National University of Singapore which is experimenting with interventions that potentially stimulate entrepreneurial activities (Wong, Ho & Singh 2007:946), as well as Central University of Technology, Free State in South Africa to mention a few. Academics play a pivotal role in this entrepreneurial pursuit by universities through their pedagogic approaches and research initiatives. Equally, organisational factors can stimulate the entrepreneurial orientation (EO) of a company, with universities being no exception (Vossebeld 2015). As one of the determinants of behaviour, the attitude of academics can make them be entrepreneurial in their approach and even transfer this attitude consciously or unconsciously to their students.

## 3.2 Possible teaching and learning strategies - entrepreneurship context

Academics at universities ought to overhaul their current teaching and learning strategies to better equip and develop their graduates into innovative and creative entrepreneurs. Radipere (2012:11018) states that entrepreneurship is a young and developing field of study in South Africa and there is an increasing demand for grounded knowledge in this field. Although various studies (Fayolle 2007) have been done on the construction of learning programmes at secondary school level as well as at university level, there is still a need for further research on the designing of courses and programmes at university level. Teaching entrepreneurship to university students may require a different approach given the nature of the subject and the intended goal, i.e. developing future entrepreneurs, job creators. The concern to depart from the passive traditional lecture-centred approach is long documented (Jones & English 2004; Radipere 2012) to a more action orientated and student-centred approach. There are many different conditions that influence transfer of learning in the

classroom (Cormier & Hagman 2014). These conditions include features of the task, features of the learner, features of the organization and social context of the activity (McKeough 2013). Dhliwayo (2008) states [that entrepreneurial learning is an experiential process in which knowledge develops through experiencing, reflecting, thinking and acting. To amplify, the features of the task include practising through simulations, problem-based learning and knowledge and skills for implementing new plans (McKeough 2013). For the learners they include their ability to reflect on past experiences, their ability to participate in group discussions, practise skills, and participate in written discussions. All these features contribute to a student's ability to engage in a transfer of learning (Cormier & Hagman 2014). In the study of Kirkley (2017:23) teachers reported benefits in terms of reduced direct teaching workload, increased participation from students and significantly improved scholastic results compared to targets set in the curriculum. Students reported positively on the greater degree of flexibility allowed under this teaching approach, while parents reported changes in attitude and more engagement in school activities and projects. Generally, students develop a level of insight and confidence from practising methods for navigating unknown territories and from experiencing success and failure.

Arasti and Falavarjani (2012) maintain that although the key to successful entrepreneurship education is to find the most effective way to manage the teachable skills and identify the best match between student needs and teaching techniques, there is no universal pedagogical recipe to teach entrepreneurship and the choice of techniques and modalities depends mainly on the objectives, contents and constraints imposed by the institutional context. A myriad of researchers (Carrier 2007; Hindle 2007; Fayolle 2007; Fayolle & Gailly 2008) and Lonappan and Devaraj 2011) classify the teaching methods into the following categories: case study, group discussion, individual presentation, individual written report, group project, formal lectures, guest speakers, action learning, seminar, web-based learning, video recordings. If the objective of the education is to prepare individuals to act as entrepreneurs, the most effective technique is to facilitate experiments by trying entrepreneurship out in a controlled environment, for instance through business simulation or role playing (Ahmad, Baharun & Rahman 2004).

# 4. AIM AND HYPOTHESIS OF THE STUDY

This aim of this article is anchored in the leading hypothesis stated as follows: 'Most academic (i.e. lecturers) staff has a positive attitude towards entrepreneurship education and will prefer to have it as a mandatory offering across academic programmes.

## 4.1 Theoretical framework

In this article, a combination of two theories was employed to explain entrepreneurial intention - the Theory of planned behaviour (TPB) (Ajzen 1991) and Self-determination theory (SDT) (Deci & Ryan 2012). The TPB is appropriate when it comes to entrepreneurial mind-set development and provides a good underpinning theory in entrepreneurial mind-set research (Kolvereid & Isaksen 2006). This TPB theory, based on the inclination to implement certain behaviour, suggests that attitudes, subjective norms, and control of the behaviour or capacity of the entrepreneur, determine the intention to create a company (Ajzen 1991). The theory of planned behaviour is on the one hand used to explain the factors and variables which can transform behaviour or action (Omoarebun 2014). On the other hand, it is used to explain the rationale behind autonomy, independence and risk taking which are core to entrepreneurship self-determination theory was used.

The theory of planned behaviour according to Ajzen (1991) is suitable for the prediction of volitional actions. Ajzen posits that intentions are the immediate antecedents of behaviour and that these intentions are determined by attitudes towards the entrepreneurial orientation behaviour and by subjective norms. Attitude is the tendency to evaluate performance of the behaviour favourably or unfavourably. Subjective norms represent the perceived social pressure to engage in the behaviour (Omoarebun 2014). Intentions are the best predictors of behaviour. With that understanding in mind, entrepreneurial intentions become the central point in understanding entrepreneurial processes (Krueger & Brazeal 1994). The performance of a particular behaviour also depends on other non-motivational factors such as availability of opportunities and resources (money, time, skills and cooperation of other people). The performance of behaviour is a joint function of intention and perceived behavioural control (Ajzen 1991). So, the entrepreneurial intentions model is employed to investigate the moderating effect of the social environment on the relationship between entrepreneurial orientation and entrepreneurial intention. Yatu, Bell and Loon (2018) posit that some researchers use entrepreneurial skills, motivation and self-efficacy as variables

that fuel or impact entrepreneurial intention and action (Fayolle & Moriano 2014; Ibrahim & Mas'ud 2016). The entrepreneurial mind-set is studied and encapsulated as a cognitive variable pivotal to any form of intention and subsequent entrepreneurial action.

Another relevant theory is Self-determination theory (SDT). SDT is a macro theory of human motivation and personality that concerns peoples' inherent growth tendencies and innate psychological needs. It is about the motivation behind choices people make without external influence and interference. According to SDT it is possible to assess the degree to which an individuals' behaviour is self-motivated and self-determined (Ryan & Deci 2002; Deci & Ryan 2012; Ryan & Deci 2017). The premise of this theory is that people are centrally concerned with motivation - how to move themselves or others to act. Everywhere, parents, teachers, coaches, and managers' struggle with how to motivate those whom they mentor, and individuals struggle to find energy, mobilize effort and persist in the tasks of life and work. People are often moved by external factors such as reward systems, grades, evaluations, or the opinions they fear others might have of them. Yet, just as frequently, people are motivated from within, by interests, curiosity, care or abiding values. These intrinsic motivations are not necessarily externally rewarded or supported, but nonetheless they can sustain passions, creativity, and sustained efforts. The interplay between the extrinsic forces acting on persons and the intrinsic motives and needs inherent in human nature is the territory of this theory. The inspiration and seed to be enterprising and entrepreneurial for students is planted by among others teachers through their actions and deeds.

## 4.2 Methodology

### *4.2.1 Research design, sampling and data collection*

The article uses a mixed-method, i.e. in-depth desktop documentary analysis as well as a survey design, specifically the quasi-experimental research design (Leedy & Ormrod 2010). Data were collected from a total of 161 random samples of 500 distributed questionnaires from four selected universities in South Africa through a LimeSurvey. The measuring instrument (PAtE) consisted of two parts: Part A related to demographics data (namely gender, age, job title, qualifications, and work experience), while Part B included attitudinal and perception items about inclusion of entrepreneurship in the university curriculum.

### *4.2.2 Statistical analysis*

The data analysis procedures chosen for this article were based on their applicability to the exploratory nature of the research design. Descriptive and inferential statistics were used to analyse the data. Pearson-product moment correlations and stepwise multiple regression analysis were performed to test the research hypothesis. Although a significance level 0.05 was set, a practical effect size of $r > 0.30$ (medium effect) (Cohen 1992) was also considered for the correlational analyses in order for the practical significance of the findings to be interpreted. In terms of the multiple regression analyses, the value of adjusted $R^2$ was used to determine the proportion of the total variance of the dependent variable (A&P) that is explained by the independent variable. The F-test was used to test whether there was a significant regression ($p \leq 0.05$) between the independent and dependent variables. For the purposes of this article, r-values larger than 0.30 (medium effect) and $R^2$ values larger than 0.13 (medium effect) (Cohen 1992) were regarded as practically significant. The Cronbach's Alpha reliability coefficient for the 15 items of the questionnaire was 0.7868. Since the variables are not normally distributed, the non-parametric Mann-Whitney U-test was performed on the data to test for significant difference between institutions of mainly diverse gender, age and qualifications for each of the 15 items, presented only in a consolidated summarised form of three core variables.

### *4.2.3 Reliability of the measuring instrument*

The piloted measuring instrument was developed with 15 closed-ended items, meant to test the attitudes as drawn from expressed views of the academic staff on entrepreneurship and its relevance to the curriculum. Factor analysis was conducted, using principal component extraction and varimax rotation, for loadings of factors (Weimar 2014) to assess the discriminant and convergent validity of the instrument. Cronbach Coefficient Alphas were computed for each of the respondents' response variables, in respect of the entire sample. This research study reported a Cronbach's alpha reliability score of 0.7868, for its pilot study of this 'PAtE' measuring instrument (see Table 1).

**Table 1: Reliability analysis of 'Perceived Attitudes towards Entrepreneurship'**

| RELIABILITY ANALYSIS – SCALE (ALPHA)<br>Item-total Statistics | | | | |
|---|---|---|---|---|
| **Items** | **Scale mean if item deleted** | **Scale variance if item deleted** | **Corrected item-total correlation** | **Alpha if item deleted** |
| 1. Familiarity with the concept entrepreneurship | 30.0018 | 9.1913 | .4611 | .7793 |
| 2. Support strong entrepreneurial culture to pervade university campus | 29.7733 | 8.4732 | .6732 | .7267 |
| 3. Have capacity to facilitate entrepreneurship | 30.2789 | 6.3748 | .4581 | .6732 |
| 4. Still or once taught entrepreneurship module | 29.1183 | 7.2193 | .6738 | .6329 |
| 5. Would love to teach entrepreneurship module | 30.2971 | 8.2764 | .2639 | .7038 |
| 6. Appreciation of inclusion of entrepreneurship in the curriculum | 30.0000 | 9.0297 | .7231 | .7782 |
| 7. Entrepreneurship and innovation must be a compulsory module | 30.0091 | 6.2964 | .5382 | .7222 |
| 8. Entrepreneurship and innovation must be an optional module | 29.1103 | 6.0294 | .4295 | .6323 |
| 9. Entrepreneurship and innovation must be a stand-alone module | 29.8910 | 7.0128 | .6385 | .7012 |
| 10. Self-initiated content of entrepreneurship and innovation module | 29.1209 | 6.3810 | .2721 | .7592 |
| 11. Have adequate knowledge of core competencies for entrepreneurship and innovation | 29.0012 | 8.3029 | .5625 | .6218 |
| 12. A need for regular supportive entrepreneurship and innovation workshops | 30.1929 | 7.3291 | .7891 | .7362 |

| Items | Scale mean if item deleted | Scale variance if item deleted | Corrected item-total correlation | Alpha if item deleted |
|---|---|---|---|---|
| 13. Requires different didactic approach (simulations, incubation hubs, practicum rooms, problem/project based) | 30.1113 | 8.3961 | .4274 | .8932 |
| 14. Guest lectures - direct and indirect engagement with relevant bodies fostering youth entrepreneurship (e.g. SIFA, IDC, SEDA, SETAs, etc) | 29.5031 | 6.2250 | .4910 | .7902 |
| 15. ICT must be an integral part of entrepreneurship education | 29.0001 | 6.2002 | .5201 | .9021 |
| **Reliability Coefficients**<br>**N of Cases = 20.0 N of Items = 15**<br>**Alpha = .0.7868** | | | | |

Source: Calculated from pilot study results

### 4.3 Ethical issues

Confidentiality and anonymity of the participants and their institutions were guaranteed. Participation was voluntary and participants could choose to withdraw at any time.

## 5. RESULTS AND DISCUSSION

### 5.1 Demographic profile of respondents

Table 2 shows that 161 participants consisted of 38.5% females and 61.5% males, with a teaching experience ranging from 3 to 33 years. The majority indicated having acceptable knowledge of what entrepreneurship is and its economic importance. A similar trend was observed for the confidence level variable, as a large majority of university participants in the Eastern Cape (89%), Free State (81%), Western Province (89%) and Northern Cape (78%) indicated having a high level of knowledge and awareness of advancing entrepreneurial spirit in the country and among young people. However, scales tilts more towards male respondents with 53%, expressing intention to be ‘own boss’. Only 16% of respondents offer entrepreneurship modules while 69% offered it as an embedded part of a Business

Management/Administration module. A total of 78.9% holds Master degrees while 21% in possession of doctorate degrees.

**Table 2: Respondents' demographic variables**

| Demographic variables (n=161) | Frequency | Total sample % |
|---|---|---|
| **Gender:** | | |
| Male | 99 | 61.5 |
| Female | 62 | 38.5 |
| **Age:** | | |
| Between 25 - 35 | 0 | 0.0 |
| Between 36 – 45 | 25 | 15.5 |
| Between 46 – 55 | 101 | 62.7 |
| More than 56 years | 35 | 21.7 |
| **Highest qualifications:** | | |
| B.Tech/Honours/Postgraduate diploma | 0 | 0.0 |
| Master degree | 127 | 78.9 |
| Ph.D | 34 | 21.1 |
| **Teaching/work experience:** | | |
| Between 1 – 12 months | 6 | 3.7 |
| Between 1 – 3 years | 10 | 6.2 |
| Between 3 – 5 years | 46 | 28.6 |
| More than 5 years | 99 | 61.5 |

Source: Calculated from survey results

Comparison of mean scores of academic staff's attitudes towards inclusion of entrepreneurship education (ENTREDU).

In order to determine whether the attitudes of participants differed in any predictable manner, a one-way ANOVA was employed followed by *post-hoc* testing to determine individual differences between any two provincial universities. Table 3 presents data on the participants' attitude scores organised by provincial universities. The data below the diagonal represents the differences between ENTREDU scores of each pair of provincial universities while the values above the diagonal represent the Bonferoni probabilities associated with the

*post-hoc* tests of significance between each pair of provincial institutions. Mean ENTREDU scores for each institution and the number of respondents comprising the sample are provided in brackets. Probabilities of less than 0.05 indicate a significant difference in the mean ENTREDU scores of the two provincial universities being compared. Results in Table 3 reveal that in general Free State (FS) university academic staff has the most positive attitudes followed by Western Cape (WP). Northern Cape (NC) and Eastern Cape (EC) academic staff have the lowest mean attitude scores with no significant differences between them. The differences between Free State university and Western Cape university in comparison with Northern Cape and Eastern Cape universities are highly significant (i.e. prob. < 0.001) as are the differences between Free State and Western Cape universities.

**Table 3: Results of one-way analysis of variance comparing the mean ENTREDU scores of the four provincial universities**

| University (N=161) | Western Cape Mean = 63.36 | Free State Mean = 77.92 | Northern Cape Mean = 54.73 | Eastern Cape Mean = 58.39 |
|---|---|---|---|---|
| WC | - | <0.001 | <0.001 | <0.001 |
| FS | 4.737 | - | <0.001 | <0.001 |
| NC | 9.027 | 13.790 | - | 0.266 |
| EC | 6.971 | 12.09 | 1.696 | - |

Source: Calculated from survey results

Comparison of mean scores of teaching staffs' sentiments towards mandatory entrepreneurship (MENTRE).

It is worth noting that a higher score on the MENTRE indicates a higher degree of nervousness (i.e. uneasiness) about mandatory entrepreneurship within the curriculum. Once again Free State academics are on average found to have least worries/concerns about mandatory entrepreneurship within the curriculum. Northern Cape and Western Cape academics have a similar degree of nervousness. Table 4 below depicts differences that are highly significant for the following universities comparison; WP and FS; WP and EC; FS and NC; and FS and EC.

**Table 4: Results of one-way analysis of variance comparing the mean MENTRE scores of the four provincial universities**

| Universities (N=161) | Western Cape Mean = 68.13 | Free State Mean = 63.19 | Northern Cape Mean = 68.43 | Eastern Cape Mean = 78.39 |
|---|---|---|---|---|
| WC | - | <0.001 | <0.789 | <0.001 |
| FS | 4.217 | - | <0.001 | <0.001 |
| NC | 0.527 | 4.890 | - | 0.006 |
| EC | 3.942 | 7.951 | 3.096 | - |

Source: Calculated from survey results

Comparison of mean scores of teaching staffs' concern with changing to appropriate didactic approaches (i.e. teaching and learning) for entrepreneurship students

From Table 5, a higher concern score indicates a greater degree of anxiety in implementing an appropriate didactic approach to entrepreneurship modules. Analysis of variance and subsequent *post-hoc* tests suggest a relatively low level of anxiety among Free State and Western Cape academics in contrast to the high level of concern expressed by their Northern Cape and Eastern Cape counterparts. An investigation of their total mean scores on DIDA indicated that FS academics were least concerned while those from NC were most concerned about making a paradigm shift, i.e. changing their current teaching styles to those more appropriate for entrepreneurship modules.

**Table 5: Results of one-way analysis of variance comparing the mean DIDA scores of the four institutions**

| University (N=161) | Western Cape Mean = 48.01 | Free State Mean = 43.14 | Northern Cape Mean = 58.41 | Eastern Cape Mean = 55.37 |
|---|---|---|---|---|
| WC | - | <0.981 | <0.001 | <0.001 |
| FS | 0.212 | - | <0.001 | <0.001 |
| NC | 9.701 | 9.897 | - | 0.893 |
| EC | 7.948 | 7.851 | 1.071 | - |

Source: Calculated from survey results

Table 6 (below) depicts divergent views about entrepreneurship and the curriculum. Inadequate entrepreneurship training ranked the highest (69.2%). This is followed by

'instilling culture of job-creation (i.e. self-employment) versus job seeking' (56.7%). Inclusion of case-studies reflecting best practices came fourth after the need for incubation hubs, simulation laboratories. Inadequate support ranked fifth at 46.8%. In general, there were no significant differences between the attitudes of male and female respondents towards mandatory inclusion of entrepreneurship in the curriculum. Significant differences in attitudes towards mandatory entrepreneurship of diverse age groups were found. Nearly 113 respondents aged 55 and older acknowledged the challenge of youth unemployment, specifically unemployed graduates. Yet they displayed subtle resistance, reluctance and discontentment towards mandatory entrepreneurship in the curriculum, probably reflecting different ideas about what the role of universities was and what their role is currently believed to be.

**Table 6: Myriad of reasons for and against entrepreneurship in the curriculum by gender from open-ended items**

| **Items (n=161)** | **Male** (%) | **Female** (%) | **Total average (%)** | **p-value** |
|---|---|---|---|---|
| Entrepreneurial spirit cultivated | 58.3 | 35.2 | 46.8 | <.001 |
| Scarce skill i.e. inadequate training | 76.8 | 61.6 | 69.2 | <.001 |
| Requires different didactic approach | 34.1 | 27.5 | 30.8 | >.005 |
| Lack of appropriate facilities, e.g. incubation hubs, simulation laboratories, etc. | 52.1 | 56.6 | 54.4 | >.081 |
| Inadequate support, i.e. materially and otherwise, e.g. seed funding, mentoring budding entrepreneurs, etc. | 39.9 | 53.7 | 46.8 | <.005 |
| Case-studies for best practices infused in curriculum | 62.7 | 35.3 | 49.0 | <.001 |
| Instil culture of job creation vis-à-vis job seeking | 63.1 | 59.4 | 56.7 | <.001 |
| Involvement in entrepreneurial activities | 73.3 | 51.0 | 62.2 | <.001 |
| ***Multiple responses do not add up to 100 percent Figures in parentheses are percentages** | | | | |

Source: Calculated from survey results

One significant inference to be drawn from these demographic variables employing Kendall tou test, is that the older the academic staff member, the more positive, trusting and content they had become with the *status quo*, and would resist anything that disturbed it. A comment by a respondent decries that "*we suffer from change fatigue; you can't teach an old dog new tricks*". Congruent to this finding is the earlier report that older workers have lower career aspirations and expectations; that they are more resistant to change; they are less able to cope with change; more difficult to train and less able to learn new skills, particularly new technology (Itzin & Philipson 1994; Withnall, McGivney & Soulsby 2004). Additionally, male respondents had a more positive inclination towards entrepreneurship than their female counterparts, with a number of them reporting that they were already engaged formally and informally in an entrepreneurial activity to supplement their incomes. Twenty years ago any entrepreneurial activity by academics was forbidden. There is still a widespread belief that business and academia are opposites (Itzin & Philipson 1994; Withnall, McGivney & Soulsby 2004). According to Scherer, Brodzinski and Wiebe (1990) for gender, there is substantial overrepresentation of males among business founders in most countries. Investment in human capital for new and contemporary didactic approaches will have to target younger and more energetic academics for entrepreneurship education. Academic freedom, flexibility and autonomy anchored on pursuance of mainly research agenda should dispel the notion that academic time and space seem to be highly controlled and regulated.

## 6. PRACTICAL IMPLICATIONS

As a response to the change of the graduate labour market and the quest for sustainable competitive advantage in South Africa, it is imperative to overhaul the education system. Starting off with academics, higher education institutions in South Africa must meaningfully integrate the change of mind-set, skills and abilities of academics for the transfer of necessary entrepreneurial competencies in order to nurture university students' entrepreneurial orientations. This imperative will aid efforts to reduce surging levels of youth and graduate unemployment and fuelling social ills.

## 7. CONCLUSIONS AND RECOMMENDATIONS

This article is the first multi-institutional study aimed at exploring academics' attitudes toward the prospective inclusion of entrepreneurship within the university curriculum. Academics as

both enablers and change agents to the attitude, mind-set and entrepreneurial intention of their students should be a departure point amongst many other systemic intervention measures. Findings revealed some similarities and differences in all four groups of academics from WC, FS, NC and EC. Various reasons were given for some of the differences, which require further research to provide conclusive answers and explanations. It is believed that a vibrant entrepreneurship ecosystem must be nurtured and fostered from an early age, especially by schools, colleges, and universities if instilling an entrepreneurial spirit amongst university students is to succeed. The results further show a willingness by the majority of academics to be change agents, not only to make a paradigm shift, but also to help advocate for entrepreneurship education. This finding does not only support the underlying hypothesis of this article, '*Most lecturers have a positive attitude towards entrepreneurship education and will prefer to have it as a mandatory offering across academic programmes'*, but also affirms the statement of Jesselyn Co and Mitchell (2006:352) that 'the teaching and assessment methods follow traditional classroom delivery while research in entrepreneurship in South Africa is perceived as less rigorous than other management disciplines'. The following recommendations become necessary:

- Mainstream entrepreneurship 'education' and elevate it to the category of mandatory critical skills.
- Mandatory collaboration with industry through industry exposure and 'consultancy' should serve as a fertile ground to engender innovation, creativity and entrepreneurial spirit among academics. Bridge the gap between theory and practice.
- Instilling entrepreneurial spirit and orientation from a very young age will reduce the mortality rate among SMEs in South Africa, which on average is reported to be the first three years of existence.
- Re-engineer current entrepreneurship educational curriculum and syllabus to promote entrepreneurship intention which could lead to entrepreneurship activities and thereby produce a healthy economy and independent individuals.
- Advocate for contemporary pedagogic approaches i.e. practice-oriented, simulations, role-play or video-games, problem-based and research based.

## REFERENCES

**ACS Z**. 2006. How is entrepreneurship good for economic growth? *Innovations, Technology, Governance, Globalization* 1(1):97-107.

**AHMAD S BAHARUN R & RAHMAN S**. 2004. Interest in entrepreneurship: an exploratory study on engineering and technical students in entrepreneurship education and choosing entrepreneurship as a career. In Project Report. Faculty of Management and Human Resource Development. Universiti Teknologi Malaysia. Skudai, Johor. [Internet:http://eprints.utm.my/2668/; downloaded on 01 February 2019.] (Unpublished.)

**AJZEN I**. 1991. Theory of planned behaviour. *Organizational Behaviour and Human Decision Processes* 50:179-211.

**ALTBACH PG REISBERG L & RUMBLEY LE**. 2009. Trends in global higher education: Tracking an academic revolution. Paris, UNESCO). (World Conference on Higher Education.)

**ARASTI Z & FALAVARJANI MK**. 2012. A Study of Teaching Methods in entrepreneurship education for graduate students. *Higher Education Studies* 2(1):1-10. [Internet:https://www.researchgate.net/publication/228464632_A_Study_of_Teaching_Methods_in_Entrepreneurship_Education_for_Graduate_Students; downloaded on 11 January 2019.]

**AUDRETSCH D CARREE M VAN STEL A. & THURIK R**. 2002. Impeded industrial restructuring: the growth penalty. *Kyklos* 55(1):81-99. [Internet:DOI:10.1111/1467-6435.00178; downloaded on 09 February 2018.]

**AUTIO E KEELEY KLOFSTEN M & ULFSTEDT T**. 2001. Evaluation of two approaches to entrepreneurial using and intention based model of venture creation. *Academy of entrepreneurship Journal* 6(1):57-63.

**BAYRAKTAR S**. 2011. Turkish preservice primary school teachers' science teaching efficacy beliefs and attitudes toward science: The effect of a primary teacher education program. *School Science and Mathematics* 111:83-92.**BOLTON DL**. 2012. Individual entrepreneurial orientation: Further investigation of a measurement instrument. *Academy of Entrepreneurship Journal* 18(1):91-98.

**CALLENDER C**. 2011. The impact of higher education for part-time students. Evidence Report 36. UK Commission for Employment and Skills. [Internet:https://webarchive.nationalarchives.gov.uk/20140108134208/http://www.ukces.org.uk/assets/ukces/docs/publications/evidence-report-36-impact-of-he-for-pt-students.pdf; downloaded on 10 December 2018.]

**CARRIER C**. 2007. Strategies for teaching Entrepreneurship: What else beyond lectures, case studies and business plan? In Fayolle A. Ed. Handbook of Research in Entrepreneurship Education. 1:143-159. Chetelham, UK: Edward Elgar. (pp 143-159.)

**CHANDRAKUMARA A ZOYSA AD & MANAWADUGE A**. 2011. Effects of the entrepreneurial and managerial orientations of owner-managers on company performance: An empirical test in Sri Lanka. *International Journal of Management* 28(1):139-158.

**CHIEN SY**. 2014. Franchisor resources, spousal resources, entrepreneurial orientation, and performance in a couple-owned franchise outlet. *Management Decision* 52(5):916-933.

**CHIMUCHEKA T**. 2014. Entrepreneurship Education in South Africa. *Mediterranean Journal of Social Sciences* 5(2):403-416.

**CHITUNGA F**. 2017. Entrepreneurship as a possible solution to youth unemployment in Africa. *Laboring and Learning* 10:433-451.

**CHONG WH KLASSEN RM HUAN VS WONG I & KATES AD**. 2010. The relationships among school types, teacher efficacy beliefs and academic climate: Perspective from Asian middle schools. *Journal of Educational Research* 103:183-190.

**COHEN J**. 1992. A power primer. *Psychological Bulletin* 112(1):155-159.

**CORMIER SM & HAGMAN JD**. eds. 2014. Transfer of learning: Contemporary research and applications. New York: Academic.

**DECI EL & RYAN RM**. 2012. Motivation, personality, and development within embedded social contexts: An overview of self-determination theory. In Ryan RM. Ed. Oxford handbook of human motivation Oxford, UK: Oxford University Press. (pp 85-107.)

**DHLIWAYO S**. 2008. Experiential learning in entrepreneurship education: a prospective model for South African tertiary institutions. *Education and Training* 50(4):329-340.

**ERASMUS BJ LOEDOFF PVZ MDA T & NEL PS**. 2006. Management training and development. Cape Town: Oxford University Press.

**FARASHAH AD**. 2013. The process of impact of entrepreneurship education and training on entrepreneurship perception and intention. Study of educational system of Iran. *Education + Training* 55(8/9):868-885.

**FATOKI OO & CHINDOGA L**. 2011. An investigation into the obstacles to youth entrepreneurship in South Africa. *International Business Research* 4(2):161-169.

**FAYOLLE A**. 2007. Essay on the nature of entrepreneurship education. [Internet:http://www.kmu.unisg.ch/rencontres/RENC2006/Topics06/A/Rencontres_2006_Fayolle.pdf; downloaded on 31 January 2019.]

**FAYOLLE A & GAILLY B**. 2008. From craft to science: Teaching models and learning processes in entrepreneurship Education. *Journal of European Industrial Training* 32(7):569-593. [Internet:http://dx.doi.org/10.1108/03090590810899838; downloaded on 31 January 2019.]

**FAYOLLE A & MORIANO J**. 2014. Beyond entrepreneurial intentions: values and motivations in entrepreneurship. *International Entrepreneurship and Management Journal* 10(4):679-689.

**FERREIRA JJ RAPOSO ML RODRIGUES RG DINIS A & DO PAÇO A**. 2012. A model of entrepreneurial intention: An application of the psychological and behavioural approaches. *Journal of Small Business and Enterprise Development* 19(3):424-440.

**FLODEN J**. 2017. How education has the power to impact your future success. [Internet:https://www.dcc.edu.za/latest-news/how-education-has-the-power-to-impact-your-future-success; downloaded on 10 December 2018.]

**GAOTLHOBOGWE M & DU TOIT A**. 2018. Should South African schools introduce entrepreneurship as a subject? Parent24. [Internet:https://www.parent24.com/Learn/High-school/should-south-african-schools-introduce-entrepreneurship-as-a-subject-20180131; downloaded on 10 December 2018.]

**GERBA DT**. 2012. Impact of entrepreneurship education on entrepreneurial intentions of business and engineering students in Ethiopia. *African Journal of Economic and Management Studies* 3(2):258-277.

**GRANDE J MADSEN EL & BORCH OJ**. 2011. The relationship between resources, entrepreneurial orientation and performance in farm-based ventures. *Entrepreneurship & Regional Development* 23(3-4):89-111.

**GREBEL T PYKA A & HANUSH H**. 2003. An evolutionary approach to the theory of entrepreneurship. *Industry and Innovation* 10(4):493-514.

**GUPTA VK & GUPTA A**. 2015. Relationship between entrepreneurial orientation and firm performance in large organizations over time. *Journal of International Entrepreneurship* 13(1):7-27.

**HAFEEZ S CHAUDHRY RM, SIDDIQUI ZU & REHMAN KU**. 2011. The effect of market and entrepreneurial orientation on firm performance. *Information Management and Business Review* 3(6):389-395.

**HARLEN W & HOLROYD C**. 1997. Primary teachers' understanding of concepts of science: Impact on confidence and teaching. *International Journal of Science Education* 19:93-105.

**HERRINGTON M**. 2017. SA's education system killing off entrepreneurship. *Business Day*. [Internet:https://www.businesslive.co.za/bd/opinion/2017-05-29-sas-education-system-killing-off-entrepreneurship/; downloaded on 23 August 2018]. (29 May 2017.)

**HINDLE K**. 2007. Teaching Entrepreneurship at the university: from the wrong building to the right philosophy. In Fayolle A. Handbook of Research in Entrepreneurship Education. Chetelham (UK): Edward Elgar.

**HORN G**. 2006. Educational solutions to improve the employability of senior high school learners. *South African Journal of Education* 26(1):113-128.

**HUGHES M & MORGAN RE**. 2007. Deconstructing the relationship between entrepreneurial orientation and business performance at the embryonic stage of firm growth. *Industrial Marketing Management* 36:651-661. [Internet:http://www.sciencedirect.com; downloaded on 12 May 2018.]

**IBRAHIM N & MAS'UD A**. 2016. Moderating role of entrepreneurial orientation on the relationship between entrepreneurial skills, environmental factors and entrepreneurial intention: a PLS approach. *Management Science Letters* 6(3):225-236.

**ILO (INTERNATIONAL LABOUR ORGANISATION)**. 2016. Global unemployment projected to rise in both 2016 and 2017 - World Employment and Social Outlook - Trends 2016. [Internet:http://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_443500/lang--en/index.htm; downloaded on 05 July 2018.]

**ITZIN C & PHILLIPSON C**. 1994. Age barriers at work. *Equal Opportunities International* 13(6,7):64.

**JACK S & ANDERSON A**. 1999. Entrepreneurship education within the enterprise culture: producing reflective practitioners. *International Journal of Entrepreneurial Behaviour & Research* 5(3):110-125.

**JESSELYN CO M & MITCHELL B**. 2006. Entrepreneurship education in South Africa: a nationwide survey. *Education & Training* 48(5):348-359. [Internet:https://doi.org/10.1108/00400910610677054; downloaded on 12 May 2018.]

**JONES C & ENGLISH J**. 2004. A contemporary approach to entrepreneurship education. *Education + training* 46(8/9):416-423.

**KIRKLEY WW**. 2017. Cultivating entrepreneurial behaviour: entrepreneurship education in secondary schools. *Asia Pacific Journal of Innovation and Entrepreneurship* 11(1):17-37. [Internet:https://doi.org/10.1108/APJIE-04-2017-018; downloaded on 12 July 2018.]

**KOE W**. 2016. The relationship between Individual Entrepreneurial Orientation (IEO) and entrepreneurial intention. *Journal of Global Entrepreneurship Research* 6(1)13.

**KOLVEREID L & ISAKSEN E**. 2006. New business start-up and subsequent entry into self-employment. *Journal of Business Venturing* 21(6):866-885.

**KRUEGER NF & BRAZEAL DV**. 1994. Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship theory and practice* 18:91-91.

**KUEHN KW**. 2008. Entrepreneurial intentions research: Implications for entrepreneurship education. *Journal of Entrepreneurship Education* 11:87-98.

**LADZANI W & VAN VUUREN J**. 2002. Entrepreneurship training for emerging SMEs in South Africa. *Journal of Small Business Management* 40(2):154-162.

**LEE SM LIM S PATHAK RD CHANG D & LI W**. 2006. Influences on students attitudes toward entrepreneurship: a multi-country study. *The International Entrepreneurship and Management Journal* 2(3):351-66.

**LEEDY PD & ORMROD JE**. 2010. *Practical research: Planning and design*. 9th ed. Upper Saddle River, NJ: Prentice Hall

**LIN S & ENVICK BR**. 2013. Gender and entrepreneurial orientation: a multi-country study. *International Entrepreneurship and Management Journal* 9(3):465-482.

**LONAPPAN J & DEVARAJ K**. 2011. Pedagogical innovations in teaching entrepreneurship. (Eighth AIMS International Conference on Management. Conference Proceedings). (pp 513-518.)

**LOPE PIHIE ZA & BAGHERI A**. 2011. Are teachers qualified to teach entrepreneurship? Analysis of entrepreneurial attitude and self-efficacy. *Journal of Applied Sciences* 11(18):3308-3314.

**LUMPKIN GT & DESS GG**. 1996. Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review* 21(1):135-172.

**MAASSEN JP & OLSEN** JP. 2007. University dynamics and European integration. United Kingdom: Palgrave.

**MARIANA-CRISTINA C**. n.d. Entrepreneurship, a solution to improve youth employment in the European Union. [Internet:http://www.strategiimanageriale.ro/papers/140476.pdf; downloaded on 10 December 2018.]

**MARTIN C**. 2015. Entrepreneurs acting as mentors in online communities for students enrolled in MA studies. *Procedia - Social and Behavioural Sciences* 197:645-651.

**MATHEWS CH & MOSER SB**. 1995. Family background and gender: Implications for interest in small firm ownership. *Entrepreneurship & Regional Development* 7(4):365-378.

**MCKEOUGH A**. 2013. Teaching for transfer: Fostering generalization in learning. New York: Routledge.

**MILLER D**. 2011. Miller (1983) Revisited: A Reflection on EO Research and Some Suggestions for the Future. Entrepreneurship: *Theory & Practice* 35(5):873-894.

**MITCHELMORE S & ROWLEY R**. 2010. Entrepreneurial competencies: a literature review and development agenda. *International Journal of Entrepreneurial Behaviour & Research* 16(2):92-111.

**MOHAMEDBHAI G**. 2014. Massification in Higher Education Institutions in Africa: causes, consequences and responses. *International Journal of African Higher Education* 1(1):Np.
[Internet:https://ejournals.bc.edu/ojs/index.php/ijahe/article/view/5644; downloaded on 03 February 2019-02.]

**MOODLEY S**. 2016. Creating entrepreneurs in South Africa through education. Gordon Institute of Business Science. University of Pretoria. (Unpublished Master of Business Administration dissertation.)

**MORIANO JA GORGIEVSKI M LAGUNA M STEPHAN U & ZARAFSHANI K**. 2011. A cross-cultural approach to understanding entrepreneurial intention. *Journal of Career Development* 39(2):162-185.

**NAONG MN**. 2011. Promotion of entrepreneurship education – a remedy to youth unemployment, a theoretical perspective. *Journal of Social Sciences* 28(3):181-189.

**NATIONAL CONTENT STANDARDS FOR ENTREPRENEURSHIP EDUCATION**. 2004. Consortium for Entrepreneurship Education. [Internet://www.entre-ed.org/Standards_Toolkit/importance.htm; downloaded on 10 May 2018.]

**NAUDÉ W**. 2010. Promoting entrepreneurship in developing countries: Policy challenges. Geneva: United Nations. (University Policy Brief 4.)

**NCHU RM**. 2015. The effectiveness of entrepreneurship education in selected high schools in the Cape Town metropolitan. Department of Entrepreneurship and Business Management. Faculty of Business and Management Sciences. Cape Peninsula University of Technology. Cape Town. (Unpublished Master of Technology - Business Administration in Entrepreneurship.)

**NDOFIREPI TM & RAMBE P**. 2016. The entrepreneurial orientation of college students in a struggling economy context. *Journal of Contemporary Management* 13:1332-1363.

**NYOMAN S & NI WAYAN SS**. 2016. Entrepreneurship for students: The relationship between Individual Entrepreneurial Orientation and Entrepreneurial Intention. *European Journal of Business and Management* 8(11):45-52.

**ODORA RJ & NAONG MN**. 2014. Destigmatisation of apprenticeship - A vehicle for entrepreneurship promotion and job creation among Further Education and Training college students. *Journal of Asian and African Studies* 49(4):457-472.

**OGBO A & AGU AC**. 2012 The role of entrepreneurship in economic development: The Nigerian perspective. *European Journal of Business and Management* 4(8):95-105.

**OKECHUKWU K**. 2018. Advancing entrepreneurship education in schools. [Internet:https://www.22onsloane.co/advancement-entrepreneurial-education-in-high-schools/; downloaded on 23 August 2018.]

**OMOAREBUN A**. 2014. Entrepreneurial orientation of graduate students in the University of Ibadan, South-West, Nigeria. Munich: GRIN [Internet:https://www.grin.com/document/283008; downloaded on 02 May 2018.]

**PETER Z**. 2018. Youth unemployment: What hope is there? *City Press*. [Internet:https://city-press.news24.com/News/youth-unemployment-what-hope-is-there-20180614; downloaded on 10 January 2019]. (14 June 2018.)

**PULKA BM RIKWENTISHE R & IBRAHIM B**. 2014. Evaluation of students' attitude towards entrepreneurship education in some selected universities in North East Nigeria. *Global Journal of Management and Business Research* 14 (8):1-8.

**RADIPERE NS**. 2012. An analysis of local and immigrant entrepreneurship in the South African small enterprise sector. Gauteng Province. University of South Africa. (D Com.)

**REPUBLIC OF SOUTH AFRICA**. 2016. About Us. Department of Higher Education and Training. [Internet:ww.dhet.gov.za/SitePages/AboutUsNew.aspx; downloaded on 01 October 2018.]

**ROBINSON S & STUBBERUD HA**. 2014. Elements of entrepreneurial orientation and their relationship to entrepreneurial intent. *Journal of Entrepreneurship Education* 17(2):1-12.

**RŰEGG W**. 2011. Ed. A history of the university in Europe. Volume IV*:* Universities since 1945. Cambridge: Cambridge University Press.

**RUNYAN RC GE B DONG B & SWINNEY JL**. 2012. Entrepreneurial orientation in cross-cultural research: assessing measurement invariance in the construct. *Entrepreneurship Theory and Practice* 36(4):819-836.

**RYAN RM & DECI EL**. 2002. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist* 55:68-78.

**RYAN RM & DECI EL**. 2017. Self-determination theory: Basic psychological needs in motivation, development, and wellness. New York: Guilford.

**SAJILAN S HADI NU & TEHSEEN S**. 2015. Impact of entrepreneur's demographic characteristics and personal characteristics on firm's performance under the mediating role of entrepreneur orientation. *Review of Integrative Business and Economics Research* 4(2):36-52.

**SCHERER RF BRODZINSKI JD & WIEBE FA**. 1990. Entrepreneur career selection and gender: A socialization approach. *Journal of Small Business Management* 28(2):37.

**SCHILLO RS**. 2011. Enterprise orientation and company performance. *Technology Innovation Management Review* 1(2):20-25.

**SCHWAB K & SALA-I-MARTÍN X**. 2014. The global competitiveness report. [Internet: http://www.weforum.org/pdf/Global_Competitiveness_Reports/Reports/factsheet_gcr03.pdf; downloaded on 13 May 2016.]

**SHANE S**. 2003. A general theory of entrepreneurship. Cheltenham, UK: Edward Elgar.

**SHIN J & TEICHLER U**. 2014. Eds. 2014. The future of university in the post-massification era: a conceptual framework. In Shin JJ & Teichler U. The Future of the post-massified university at the crossroads. Restructuring systems and functions. London: Springer.

**SONDARI MC**. 2014. Is entrepreneurship education really needed? Examining the antecedent of entrepreneurial career intention. *Procedia-Social and Behavioural Sciences* 115: 44-53.

**STATS SA (STATISTICS SOUTH AFRICA)**. 2018. Statistical release. Quarterly Labour Force Survey. Quarter 1: 2018. Pretoria: South Africa

**SU D & SOHN D**. 2015. Roles of entrepreneurial orientation and guanxi network with parent university in start-ups' performance: evidence from university spin-offs in China. *Asian Journal of Technology Innovation* 23(1):1-19.

**SWANEPOEL E STRYDOM JW & NIEUWENHUIZEN C**. 2010. An empirical analysis of a private company's corporate social investment in SMME development in South Africa. *South African Business Review* 14(1):58-78.

**THU TDT & HIEU HL**. 2017. Building up the entrepreneurial intent construct among technical students in Vietnam. *Journal of Small Business and Entrepreneurship Development* 5(1):7-18.

**TIAGO T FARIA S COUTO JP & TIAGO F**. 2015. Fostering innovation by promoting entrepreneurship: from education to intention. *Procedia - Social and Behavioural Sciences* 175:154-161.

**VETRIVEL S**. 2010. Advances in management. Entrepreneurship and education: a missing key in development theory and practice. *Advances in Management* 3(8):18-22.

**VIJ S & BEDI HS**. 2012. Relationship between entrepreneurial orientation and business performance: A review of literature. *The IUP Journal of Business Strategy* IX(3):17-31.

**VON BROEMBSEN M WOOD E & HERRINGTON M**. 2005. Global Entrepreneurship Monitor, South African Report. [Internet:http://www.gbs.nct.ac.za/gbswebb/userfiles/gemsouthafrica2000pdf; downloaded on 08 March 2019.]

**VOSSEBELD J**. 2015. How can universities use organizational factors to stimulate entrepreneurship? A quantitative study on entrepreneurial behaviour at the departments of management & governance and

behavioural sciences of the University of Twente. (Unpublished dissertation MSc in Business Administration: Innovation & Entrepreneurship.)

**WEBBSTOCK D & SEHOOLE C**. 2016. Academic staffing. In: South African higher education reviewed: Two decades of democracy. Council for Higher Education: Pretoria.

**WEIMAR N**. 2014. Investigation of factor rotation routines in principal component analysis of stock returns. Cape Town: University of Cape Town Press.

**WITHNALL A McGIVNEY V & SOULSBY J**. 2004. Older people learning - myths and realities. Research Series. Leicester: DfES and NIACE.

**WONG PK HO YP & SINGH A**. 2007. Towards an "entrepreneurial university" model to support knowledge-based economic development: The case of the National University of Singapore. *World Development* 35(6):941-958.

**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(4):752-774.

**YATU L BELL R & LOON M**. 2018. Entrepreneurship education research in Nigeria: current foci and future research agendas. *African Journal of Economic and Management Studies* 9(2):165-177 [Internet:https://doi.org/10.1108/AJEMS-08-2016-0120; downloaded on 02 February 2019.]

**YONG GLA & HO KW**. 2006. Innovation, imitation and entrepreneurship. *The Singapore Economic Review* 51(02):147-173.

**YU D**. 2017. The lesser known and scarier facts about unemployment in South Africa. *The Conversation*. [Internet:http://theconversation.com/the-lesser-known-and-scarier-facts-about-unemployment-in-south-africa-83055 downloaded on 10 January 2019]. (03 September 2017.)

**YUSOF M & JAIN KK**. 2010. Categories of university-level entrepreneurship: a literature survey. *International Entrepreneurship and Management Journal* 6(1):81-96.

**ZIMMERER TW & SCARBOROUGH NM**. 2008. Entrepreneurship and small business management. 5th ed. Prentice Hall: New Jersey.