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Entrepreneurship education, curriculum and lecturer-competency as antecedents of student entrepreneurial intention

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ABSTRACT

The high unemployment rate that has become characteristic of the South African economy has generated some spinoffs that bode undesirable consequences, not only for economic development but also for sane social-cultural coexistence of the people. Recourse to entrepreneurship rather than clinging on to an endless hope for formal employment has been touted as a possible antidote for confronting the situation. However, a prerequisite to self-employment is entrepreneurial intention. This study therefore explores factors that may influence student entrepreneurial intention.

The study is based on quantitative data collected in a cross-sectional manner, from students at a South African university. Empirical results suggest that the respondent group strongly accede to the usefulness of entrepreneurship education for economic development which reveals that they are well-versed with the role and gains of entrepreneurship at a macro level. The study also found that perceived competency of the lecturing team demonstrates a moderate and positive correlation with student entrepreneurial intention. The implication of this is that institutions offering entrepreneurship programmes must saddle the responsibility to ensure that persons used to deliver the courses are not only highly competent but can kindle the entrepreneurial intention flame in students.

1. Introduction

South Africa's graduate unemployment is a major concern for many – families, businesses and government. Notably, the unemployment rate has surpassed 25%, a trend that has been associated by Chimucheka (2014) to increasing social ills in the South African society. The implication of this high unemployment is that a degree is not sufficient to be employed (GEM, (2015). Strangely, despite

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the suitability of entrepreneurship as an alternative to traditional employment, entrepreneurial activity is currently low in South Africa. A recent OECD economic survey also identified low entrepreneurship in South Africa compared to other emerging economies (OECD, 2017). A critical way forward therefore is to expose South African youths to entrepreneurial education and thereby enable them escape from the vicious circle of poverty (North, 2002). The likelihood of a business venture succeeding depends on a graduate's business skills (GEM, 2012). It is therefore not in question whether there is the need to provide learners with entrepreneurship education rather whether those in entrepreneurial training find any value in it. By finding value, we mean taking up an entrepreneurial activity at the end of the programme. This is the basis upon which this study was conducted.

Entrepreneurship education stimulates the desires of students to choose self-employment after graduation (Lawan, Envuladu, Mohammed, Wali & Mahmoud, 2015; Premand, Brodmann, Almeida, Grun & Baroumi, 2016). Through this programme, students are made aware of the different ways to start business ventures as well as the support services available (Fatoki, 2010; Katundu & Gabagambi, 2016). Interestingly, Makgosa and Ongori (2012) and Rudhumbu, Svotwa, Munyanyiwa, and Mutsau (2016) note that in spite of vocational education and entrepreneurship support programmes, graduates rarely consider entrepreneurship as a career or show interest in becoming entrepreneurs.

Set in a South African tertiary institution, this study's broad aim was to identify how students perceive entrepreneurship education, relevance and adequacy of the curriculum and the competency of the lecturing team. This aim weighs in on the ongoing debate in society that poses the question: are entrepreneurs born and is entrepreneurship a learned process? There are contending views that (1) it is not possible to pass on entrepreneurial skills because of personality and psychological differences of people (Hindle, 2007; Thompson, 2004), and (2) the ability to take up entrepreneurial activity depends on one's experiences more than systematic teaching approaches (Bechard & Gregoire, 2005). Obtaining the views of students on issues revolving around entrepreneurship education could assist in more effective programme delivery, more so because Bechard and Gregoire (2005) aver that lecturers often struggle to facilitate entrepreneurial classes as evidenced by the reality that only a marginal number of their students take up an entrepreneurial activity upon graduation. Other stakeholders such as the government and higher education administrators will also benefit from the study because of the need to deal with unemployment and issues of curriculum and subject outcomes, respectively. In the main, the study explores the extent to which a relationship exists between the independent variables of perceptions of entrepreneurship education, perceived competence of lecturing team (lecturers on the programme), perceived relevance and adequacy of entrepreneurship curriculum and course content and the dependent variable of student entrepreneurial intention.

2. Literature review

2.1. Entrepreneurship and entrepreneurship education

Entrepreneurship being a multi-facetted paradigm has been defined by various schools of thoughts thus there is no cohesive definition for entrepreneurship in the literature. According to Nicolaides (2011), entrepreneurship is a process that nurtures and promotes economic growth, job creation and prosperity through viable businesses. Rwigema and Venter (2004) also define entrepreneurship as the process of innovative conceptualisation, organisation and management of a sustainable business. Mokaya, Namusonge, and Sikalieh (2012) link entrepreneurship to the motivation to take risks, start up and sustain a profitable, goal driven business venture. The aforementioned definitions therefore imply that an entrepreneur can be seen as someone who takes risks, is innovative, organises and manages the resources of an enterprise in order to make profit.

Goetz, Fleming, and Rupasingha (2012) concur that being an entrepreneur has significant economic impacts not only on the gross domestic product of a country but also on the reduction of poverty as well as the increase of the per capita income of a country. With the high unemployment rate amongst the youths in South Africa, entrepreneurship as a career offers graduates financial independence and a means to contribute to the economy by creating jobs (Nchu, Tengeh, Hassan, & Iwu, 2017) but this, of-course depends on the existence and/or extent of entrepreneurial intention embodied by individuals. Researchers including Tengeh, Iwu, and Nchu (2015) as well as Fatoki (2014) are also of the opinion that self employment offers graduates the opportunity to be job creators rather than job seekers since not everyone is cut out for the formal paid-employment market. In essence, this route of self-employment, it would seem, could be paved by entrepreneurship education, granted that recipients consider it relevant.

Entrepreneurship education, aside from teaching students about starting and running a business also promotes creative thinking, innovation and a strong sense of self-esteem and discipline. According to the Consortium of Entreprenuership Education (2013), entrepreneurship education strives to prepare graduates to be entrepreneurial and contribute to the sustainable development of their economy. Pulka, Aminu, and Rikwentishe (2015) contend that entrepreneurship education enables the acquisition of entrepreneurial knowledge, skills, attitudes and behaviours. Typical graduates of entrepreneurship programmes are equipped with creative and innovative skills as well as the ability to identify opportunities and act on those opportunities by creating new ventures (Gerba, 2012).

Fayolle and Klandt (2006), consider effective entrepreneurship education as a three-dimensional concept linked to behaviour, mind-set and the creation of specific situations. The behavioural aspect involves the development of specific skills that enable opportunity identification, crucial decision-making and ease of networking with stakeholders. Entrepreneurship education, as it concerns the mind-set affects attitudes, beliefs and values as these play a vital role in the sparking and honing of entrepreneurship intentions. The third dimension of entrepreneurship education linked to creating specific situations highlights the influence it has on the development of new ideas and new businesses (Fayolle & Klandt, 2006).

Recognising this, Mapfaira and Setibi (2014) emphasised that entrepreneurship education promotes entrepreneurial awareness in students through the process of starting up and running an enterprise. McStay (2008) also avers the same views about entrepreneurship education having evolved from focusing on the characteristics of an entrepreneur and on how to write a business plan to investigating

entrepreneurial behaviours, attitudes and instilling self-confidence to be able to create a business. These positions tend to suggest that in the main, entrepreneurship education should focus on developing an entrepreneurial mind-set or sparking entrepreneurial intention, as it may be the epicentre of other entrepreneurial actions.

2.2. Students and entrepreneurship

Allport (1935) describes an attitude as a mental state of readiness that is structured through experiences and exerts a directive or dynamic influence on the individual's response to all objects and situations to which it is related. In a nutshell, attitude is a mind-set to behave in a particular manner due to one's experiences as well as one's temperament. Attitudes tend to evolve from a complex combination of personality, beliefs, values, behaviours and motivations of an individual. Pickens (2005) suggest with his tri-component model that an attitude consists of three components: a feeling (or an effect), a belief (or cognition) and an action (or behaviour).

It would therefore seem that students' attitude towards entrepreneurship and entrepreneurship education can be influenced by their beliefs, thought processes, behaviours, experiences and social surroundings. As such, students' attitudes towards entrepreneurship and entrepreneurship education can be viewed in terms of three aspects of entrepreneurship attitude identified by Pulka et al. (2015) as cognitive, affective and behavioural attitude components. The beliefs, thoughts and knowledge students have about entrepreneurship and entrepreneurship education form part of the cognitive component (Amdam, 2011). Pulka, Rikwentishe, and Ibrhain (2014) affirm that the feelings and emotions that students have about entrepreneurship and entrepreneurship education form part of the affective component. The actions, responses and willingness to respond to or accept something form part of the behavioural component (Mani, 2008). Suffice it to note therefore that knowledge of students' perceptions of issues associated with entrepreneurship can indeed be pivotal in encouraging entrepreneurial behaviour among them.

Perceptions can be coloured by attitudes as it is the process by which individuals interpret and organise sensations to produce a meaningful experience of the world (Adediran & Onifade, 2013; GEM, 2010; Maalu, Nzuve, & Magutu, 2010; Moy & Wright, 2003; Udo-Imeh, Magaji, Hamidu, & Yakubu, 2016). Perceptions are often fruits of instances where an individual is confronted with a situation or stimuli and the person interprets the stimuli to develop something meaningful to him or her, based on prior experiences (Maalu et al., 2010). Specifically, therefore, students' perception of entrepreneurship-related matters may reveal the extent to which they view entrepreneurship as beneficial.

From the literature (Moy & Wright, 2003; Maalu et al., 2010; GEM, 2010), a majority of students have a positive perception of entrepreneurship as a career option though with some reservations due to challenges such as insufficient start-up funds, inadequate skills to sustain a business and the fear of failure. Curiously, some studies show that there is no significant difference in the perception of entrepreneurship between students who had had prior exposure (through Business Studies subject at school) and those who had not studied the subject (Nchu, Tengeh, & Hassan, 2015). To some extent, this finding underlines the unpredictable nature of the perceptions of individuals and exposes the danger in applying perceptions determined in a specific context to another situation. Clearly, it is instructive to note though that perception is a subjective construct given that it is a function of the way an individual views reality (Lindsay & Norman, 1977). Perception is therefore likely to play a critical role in the uptake of entrepreneurship roles by students. Indeed, if a person has a positive perception towards entrepreneurship it is likely that the person will engage in an entrepreneurial act (GEM, 2010). Moy and Wright (2003) agree with this and explain that this happens because individuals with a positive perception towards entrepreneurship are confident enough to be able to overcome any obstacles.

This assertion seems to suggest that entrepreneurial intention is associated with actual entrepreneurial behaviour. Henley (2007) reaffirms that entrepreneurship intentions are developed a year prior to the actual entrepreneurial activity. The planned behaviour theory argues that there is a link between beliefs and behaviour which further asserts that there is a relationship between the intention to be an entrepreneur and becoming an entrepreneur (Ajzen's, 1991). This trajectory may be aided by entrepreneurship education that imparts entrepreneurial skills to individuals to enable entrepreneurial intention, opportunity recognition and new venture creation (Fatoki, 2014). Whether this is the case in the cohort of respondents studied remains to be seen.

3. Hypotheses

Considering the foregoing, we argue that for entrepreneurship to be as attractive to a student in the manner that disciplines such as medicine and engineering are, the student has to positively perceive entrepreneurship as a viable option for self-employment after graduation. Premand, Brodmann, Almeida, Grun and Baroumi (2016) posit that entrepreneurship education stimulates the desires of students to choose self-employment after graduation. We therefore hypothesise that:

H1. *There is a correlation between a positive perception of entrepreneurial education (PEE) and student entrepreneurial intention.*

Although, entrepreneurship education stimulates entrepreneurship, there are certain barriers that lower entrepreneurial propensity of students most especially in emerging economies (Fatoki & Chindoga, 2011; Neneh, 2014). This study therefore assumes that the objective conditions which lead to a positive perception of entrepreneurship should include stimulating features and activities that drive the students' career decision towards self-employment. Recent literature has increasingly linked student entrepreneurship intention to the perceived relevance and adequacy of course content (e.g. Ahmad, Abu Bakar, & Ahmad, 2018; Gelaidan & Abdullateef, 2017; Palalic, Ramadani, Dilovic, Dizdarevic, & Ratten, 2017). Palalic et al. (2017) argue that improving the overall business surrounding and entrepreneurial education might increase the entrepreneurial intentions of aspirants. Gelaidan and Abdullateef (2017) and Ahmad et al. (2018) are in agreement with this notion and propose an entrepreneurial intention-motivation approach that

endorses relevance and adequacy of curriculum and course contents. Essentially, they argue that doing that would optimise the learning and practical understanding outcomes, and entrepreneurial uptake propensity, of students. This viewpoint connects to an earlier study by Korrea et al (2011) who contend that optimally activating entrepreneurial intentions requires that the youths are motivated to learn how to exploit opportunities in markets, hence the need for the nomological web between relevance and adequacy of course content and entrepreneurship intention (EI). According to more current literature (OECD, 2017), the current teaching method lacks the required practical element that will encourage entrepreneurship intention in South Africa due to overemphasis on academic and theoretical content. Advancing this position, we argue that:

H2. *There is a correlation between perceived relevance and adequacy of course content and student entrepreneurial intention.*

Higher education institutions in South Africa are beset with several problems which include scarcity of specialist skills leading to poor quality of teaching and learning (Akoojee & Nkomo, 2007; Scott, , Yeld, and Hendry, & eds, 2007). This study suggests that the observed weaknesses hinders the ability of the lecturing team to achieve the required graduate outcomes (knowledge, skills and attitudes), and might thus also hinder the development of entrepreneurial intention as a learning outcome. Considering that entrepreneurship has been recognised as an essential driver of the economy, the question arises as to the extent the current lecturing team inspires students to take up entrepreneurship. On the basis of this, we hypothesise thus:

H3. *There is a correlation between perceived competence of lecturing team and student entrepreneurial intention.*

4. Research methodology

To understand students' entrepreneurial intention antecedents, a survey was conducted at a South African university of technology. The university in question is among the few in the country that has a full-fledged department of entrepreneurship (offering a full suite of qualifications from Diploma to Postgraduate degree in Entrepreneurship) which designs the curriculum in collaboration with the overseeing government entity known as the Department of Higher Education and Training. The university is ranked number one among the best universities of science and technology in Africa (Timilehin, 2018) as well as one of the best universities of technology in South Africa (Gerber, 2017). South African universities of technology are known to provide vocation-based, career-focused programmes. Overall, the purpose of the programme is to prepare students for entrepreneurial engagement upon graduation. The suitability of this university's students for the purpose of this study is justified on the methodological logic that a sample of these students would potentially be composed of tomorrow's entrepreneurs as well as those that may not have entrepreneurial ambitions as argued by Ozaralli and Rivenburgh (2016). In the conceptualised framework, four main constructs were involved, namely perception of entrepreneurship education (PEE), perceived relevance and adequacy of curriculum and course content (PRACC), perceived competence of lecturing team (PCLT), and student entrepreneurial intention (SEI). The instrument utilised was developed on the basis of validated measurement items from past studies (Adediran & Onifade, 2013; Ajzen, 2002; Aldrich & Martinez, 2001; Choo & Wong, 2006; Choo & Wong, 2006, 2006; Krueger, Reilly, & Carsrud, 2000; Liñán & Chen, 2009; Ozaralli & Rivenburgh, 2016; Peng, Lu, & Kang, 2012; Udo-Imeh et al, 2015, 2016; Van Gelderen et al., 2008). It was pilot-tested with six students and subsequently revised taking into consideration the cues gained through the pilot testing to make the questionnaire suitable for the population for this study. Following the methodological precedence in past studies (Joshi, Oka, Kulkarni & Bivalkar., 2013; Peng et al., 2012; Qu & Krause-Ono,

Table 1
The Demographics of Respondents in this Study (n = 125).

Variables	Categories	Frequency	Percentage (%)
Gender	Male	75	60.0%
	Female	50	40.0%
Age (Years)	Less than 20	0	0.0%
	21–25	77	61.6%
	26–30	37	29.6%
	31–35	4	3.2%
	Above 35	7	5.6%
Year of Study	3rd Year	41	32.8%
	4th Year	84	67.2%
Nationality	South African	79	63.2%
	Non-South Africans	46	36.8%
	Among Non-South Africans (46):		
	African (Others)	34	27.2%
	Asian	6	4.8%
	European	3	2.4%
	South American	1	0.8%
	North American	1	0.8%
	Australian/Oceanic	1	0.8%
Cultural Group	Black	97	77.6%
	Coloured	12	9.6%
	Indian/Asian	6	4.8%
	White	10	8.0%

2016), the questionnaire for this study contained items in the form of statements that were accompanied by 5-point Likert scale response options ranging from 1 = Strongly Agree to 5 = Strongly Disagree.

Considerate of time already spent in the academic programme, the participants in the main study included only students at 3rd Year and 4th Year levels. Overall, one hundred and eighty students were registered at both levels of study respectively at the time of this study. Ozaralli and Rivenburgh (2016) argue that it is preferable in a survey research, for participation to be voluntary and anonymous. In line with that methodological rationality, participating students voluntarily picked up a copy of the questionnaire at the open area of the research centre and anonymously returned their completed questionnaires to the collection box in the aforementioned area. Out of the 161 questionnaires picked up by students, 131 questionnaires were returned reflective of a response rate of 81.37% which compares favourably with past entrepreneurship education studies like those of Udo-Imeh et al. (2016) in Nigeria and in China that obtained response rates of 88.39% and 92.84% respectively. Six of the returned questionnaires were considered to be invalid due to incomplete responses and were therefore eliminated after questionnaire-screening. Thus, the analysis for this study was based on one hundred and twenty-five (125) useable questionnaires.

5. Findings

5.1. Descriptive statistics

Table 1 shows the demographics of participants in this study. More males than females participated in the study giving that the respondent population was made up of 60% of male students and 40% of female students. The participants were predominated by persons in the 21–25 age group which is typical of a tertiary institution setting. Interestingly, an overwhelming number of fourth year students took part in the study relative to their third year counterparts. This may be reflective of the fact that the fourth year students are on the threshold of graduation and so are on the verge of confronting the self-employment or paid-employment decision and this may have increased their interest in the study and encouraged their participation. With respect to nationality of participants, unsurprisingly, given the location of the university in which the study was undertaken, South Africans accounted for 63.2% in comparison to students of other nationalities. As it pertains to the racial composition of respondents, approximately 3 out of every 4 students who participated was Black.

Methodologically, bootstrap procedure can be utilised to generate a set of replicate samples from the observed sample (Salganik, 2006). The set of replicate samples is then used to achieve a set of replicate estimates (Efron, 1987; Salganik, 2006). To construct a confidence interval around the original point estimate, it is ideal to examine the variation in the replicate estimates (Efron, 1987; Efron & Tibshirani, 1998). The original data upon which this current study is based was generated from a limited sample (n = 125). Towards enhancing the empirical evidence from this current study, a bootstrap re-sampling test was run to gauge the confidence interval for the population of this study (Efron & Tibshirani, 1998; Salganik, 2006).

The bootstrap test run was based on the extrapolated sample of 1000 (n = 1000). The results for each of the measurement items for all four constructs (PEE, PRACC, PCLT and SEI) reflect a satisfactory statistical strength (Salganik, 2006) and the statistical evidence summary (see Table 2) shows a bootstrap re-sampling confidence interval that matches the 95% confidence level benchmark (see Efron & Tibshirani, 1998; Salganik, 2006). This empirical bootstrap re-sampling result indicates a satisfactory confidence level for the original data and sample, and thus valid conclusions can be made based on the original sample (n = 125).

Descriptive analysis was carried out to understand how the respondents scored the measurement items on the 5-point Likert scale. In addition, the standard deviation and mean values for each variable used in measuring the constructs were estimated. The statistical results for each variable are satisfactory as shown in Table 3. Participants in this study overwhelmingly support the fact that entrepreneurial education can be considered as a tool for driving economic activity, with a convincing majority of survey participants accepting that entrepreneurship education is a discipline that promotes self-reliance (74.5%), promotes self-employment among people (72.8%) and enhances creative and innovative ideas (78.2%). This economic activity importance of entrepreneurship education is further reinforced in the empirical evidence for other entrepreneurship education measures as the majority of respondents are convinced that entrepreneurship education can facilitate the development of commerce in rural communities (74.5%), equips graduates with business creation skills (72.7%) and helps in harnessing local resources (77.3%).

The empirical evidence for the perceived relevance and adequacy of curriculum and course content paints a blurred picture, though. On the one hand, participants are convinced that the time allocated for the course in the time table is adequate (67.3%) and that preparation of feasibility studies is contained in the course outline (78.2%). Furthermore, 61.8% of the participants suggest that the course exposes them to relevant sources of funds for entrepreneurship activities, while a convincing 78.1% agree that preparation of a business plan is part of the study. Intriguingly, while 69.1% of the survey participants contend that the course covers basic skills required for entrepreneurship, the evidence for other variables suggests there might be disturbing features in the design of the curriculum and course contents. For example, only a very narrow majority agree that the course covers how business opportunities can be

Table 2
Bootstrap Re-sampling confidence interval results.

Sampling Method	Simple
Number of Samples	1000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

Table 3
Descriptive statistics for questionnaire items (N = 125).

	Construct & Items	Mean	Std. Dev.	Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly Disagree 5
1	**Perception of Entrepreneurship Education**							
	Factor Mean: 2.175							
	Cronbach Alpha:0.95							
	Entrepreneurship education is suitable for any economy (V1)	1.927	1.136	47.3%	29.1%	10.9%	9.1%%	3.6%
	Entrepreneurship education is a discipline that can promote self-reliance (V2)	2.055	1.044	34.5%	40.0%	12.7%	10.9%	1.8%
	Entrepreneurship education promotes self-employment among people (V3)	1.982	1.194	47.3%	25.5%	14.5%	7.3%	5.4%
	Entrepreneurial education decreases unemployment among the youths (V4)	2.327	1.187	27.3%	36.4%	20.0%	9.1%	7.3%
	Entrepreneurship education enhances creative and innovative ideas (V5)	2.127	1.187	32.7%	45.5%	5.5%	9.1%	7.3%
	Entrepreneurship education can facilitate the development of commerce in rural communities (V6)	2.255	1.092	21.8%	52.7%	9.1%	10.9%	5.5%
	Entrepreneurship education helps in reducing numbers of failed businesses (V7)	2.218	1.049	27.3%	40.0%	18.2%	12.7%	1.8%
	Entrepreneurship education reduces poverty (V8)	2.418	.896	12.7%	45.5%	30.)%	9.1%	1.8%
	Entrepreneurship education equips graduates with business creation skills (V9)	2.200	1.161	30.9%	41.8%	7.3%	16.4%	3.6%
	Entrepreneurship education helps in harnessing local resources (V10)	2.236	.902	30.0%	47.3%	11.8%	10.9%	–
2	**Perceived Relevance & Adequacy of Curriculum and Course Content**							
	Factor Mean: 2.277							
	Cronbach Alpha:0.94							
	The time allocated for the course in the time table is adequate (V1)	2.382	1.097	18.2%	49.1%	14.5%	12.7%	5.5%
	The course covers basic skills required for entrepreneurship (V2)	2.327	1.139	21.8%	47.3%	14.5%	9.1%	7.3%
	The course covers how business opportunities can be identified (V3)	2.073	1.152	20.4%	30.0%	19.1%	15.1%	15.5%
	Preparation of feasibility studies is contained in the course outline (V4)	2.200	1.044	21.8%	56.4%	5.5%	12.7%	3.6%
	The programme encourages students to meet and share business ideas (V5)	2.272	1.008	18.0%	35,9%	12.7%	19.5%	11.8%
	The course exposes students to relevant sources of funds for entrepreneurship activities (V6)	2.455	1.152	18.2%	43.6%	21.8%	7.3%	9.1%
	Students are encouraged to have practical experience in entrepreneurship through field work and interaction with practicing entrepreneurs (V7)	2.400	1.132	18.2%	33.3%	20.0%	15.5%	13.1%
	Preparation of a Business Plan is part of the study (V8)	2.109	1.100	30.9%	47.3%	5.5%	12.7%	3.6%
3	**Perceived Competence of Lecturing Team**							
	Factor Mean: 2.259							
	Cronbach Alpha:0.94							
	The lecturers show much interest in teaching the course (V1)	2.072	1.069	36.4%	32.7%	21.8%	5.5%	3.6%%
	The lecturers encourage students to participate in entrepreneurship related activities (V2)	2.236	1.071	21.8%	40.0%	12.9%	9.8%	15.5%
	Students are encouraged to consider starting their own business (V3)	2.290	1.083	25.5%	35.2%	21.8%	10.9%	6.6%
	The lecturers have stimulated my interest in becoming an entrepreneur (V4)	2.382	1.062	18.2%	37.3%	16.4%	14.5%	13.6%
	The lecturers make the course relevant to the real world (V5)	2.345	.9664	14.5%	42.7%	20.0%	9.1%	13.6%
	The lecturers address questions I have concerning entrepreneurship (V6)	2.363	1.095	18.2%	49.1%	18.2%	7.3%	7.3%
	The lecturers know what it means to be an entrepreneur (V7)	2.164	.9381	23.1%	39.1%	14.5%	12.7%	10.5%
	The lectures use diverse business cases to help provide in-depth knowledge of entrepreneurship in different sectors/industries (V8)	2.218	.9562	25.0%	42.7%	14.5%	10.9%	6.8%
4	**Student Entrepreneurial Intention**							
	Factor Mean: 2.269							
	Cronbach Alpha:0.93							
	My goal is to become an entrepreneur (V1)	2.109	1.149	32.7%	45.5%	5.5%	10.9%	5.5%
	I will try all my best to create my own business (V2)	2.218	1.013	23.6%	47.3%	14.5%	12.7%	1.8%
	I've already prepared everything for starting a business (V3)	2.272	1.079	25.5%	40.0%	20.0%	10.9%	3.6%
	Despite failure, I will continue to create my own business until I succeed (V4)	2.400	1.099	16.4%	50.9%	16.4%	9.1%	7.3%
	Even if there is strong rejection from parents, I will still commit to starting my business (V5)	2.346	1.205	23.6%	47.3%	7.3%	14.5%	7.3%

identified (50.4%), encourages students to meet and share business ideas (53.9%) as well as acquire practical experience in entrepreneurship through field work and interaction with practicing entrepreneurs (51.5%).

The evidence for perceived competence of lecturing team shows similarities with the evidence for perceived relevance and adequacy of curriculum and course contents. Majority of the participants concur with the suggestions that the lecturers show interest in teaching the course (69.1%). Encourage students to participate in entrepreneurship related activities (61.8%) and start their own business (60.7%). There is also palpable positive consensus that the lecturers address questions that the students have concerning entrepreneurship (67.3%) and use diverse business cases to help provide in-depth knowledge of entrepreneurship in different sectors/industries (67.7%). The statistical evidence for the statements that 'the lecturers have stimulated my interest in becoming an

Table 4
Summary of Principal Component Analysis of the study's constructs (n = 125).

Perception of Entrepreneurship Education (F1 = PEE)											
	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	Factor Loadings
(V1)	1.000										.789
(V2)	.690	1.000									.832
(V3)	.654	.759	1.000								.873
(V4)	.485	.598	.671	1.000							.771
(V5)	.666	.682	.745	.745	1.000						.895
(V6)	.687	.653	.742	.649	.731	1.000					.872
(V7)	.744	.666	.654	.537	.781	.743	1.000				.851
(V8)	.467	.549	.630	.461	.576	.532	.591	1.000			.713
(V9)	.615	.694	.724	.583	.734	.718	.617	.523	1.000		.838
(V10)	.505	.576	.623	.653	.715	.727	.688	.631	.697	1.000	.824
Explained Variance of PEE: 68.48%					Determinant Significance of PEE: 0000						
Eigen-Value of PEE: 6.848					**Kaiser-Meyer-Olkin Measure of Sampling Adequacy for PEE:** 0.91 (.000)						
Perceived Relevance and Adequacy of Curriculum and Course Content (F2 = PRACCC)											
	V1	**V2**	**V3**	**V4**	**V5**	**V6**	**V7**	**V8**	**Factor Loadings**		
(V1)	1.000								.836		
(V2)	.757	1.000							.861		
(V3)	.593	.701	1.000						.839		
(V4)	.676	.723	.804	1.000					.907		
(V5)	.574	.566	.668	.757	1.000				.806		
(V6)	.710	.647	.616	.724	.673	1.000			.843		
(V7)	.710	.658	.460	.621	.519	.639	1.00		.768		
(V8)	.640	.754	.797	.803	.691	.691	.691	1.000	.891		
Explained Variance of PRACCC: 71.38%,					**Determinant Significance of PRACCC:** 0 .001						
Eigen-Value of PRACCC: 5.710					**Kaiser-Meyer-Olkin Measure of Sampling Adequacy for PRACCC:** 0.91 (0.000)						
Perceived Competence of Lecturing Team (F3 = PCLT)											
	V1	**V2**	**V3**	**V4**	**V5**	**V6**	**V7**	**V8**	**Factor Loadings**		
(V1)	1.000								.854		
(V2)	.680	1.000							.858		
(V3)	.765	.858	1.000						.865		
(V4)	.643	.733	.690	1.000					.829		
(V5)	.585	.600	.592	.608	1.000				.781		
(V6)	.626	.652	.674	.658	.597	1.000			.819		
(V7)	.745	.735	.736	.605	.631	.680	1.000		.866		
(V8)	.673	.690	.671	.627	.658	.613	.661	1.000	.833		
Explained Variance of PCLTeam: 70.34%					**Determinant Significance of PCLTeam:** 0.002						
Eigen-Value of PCLTeam: 5.627					**Kaiser-Meyer-Olkin Measure of Sampling Adequacy for PCLTeam:** 0.93 (.000)						
Student Entrepreneurial Intention (F4 = SEI)											
	V1	**V2**	**V3**	**V4**	**V5**	**Factor Loadings**					
(V1)	1.000					.921					
(V2)	.791	1.000				.885					
(V3)	.647	.673	1.000			.814					
(V4)	.786	.652	.609	1.000		.863					
(V5)	.814	.772	.681	.747	1.000	.915					
Explained Variance of SEI: 77.51%					**Determinant Significance of SEI:** .018						
Eigen-Value of SEI: 3.876					**Kaiser-Meyer-Olkin Measure of Sampling Adequacy for SEI:**						
0.88 (.000)											

entrepreneur' and 'the lecturers make the course relevant to the real world', reflect lower acceptance levels of 55.5% and 56.2% respectively. Thus, the evidence seems to suggest that a substantial percentage of participating students in this study may not be satisfied with the competency level of their lecturers.

With regards to the student entrepreneurial intention, empirical insights, as shown in Table 3 suggest a high level of entrepreneurial intention of participants. A large percentage of participants have the goal of becoming entrepreneurs (78.3%) and will try all their best to create their own business (70.9%). A similar trend was evident for statements like 'I have already prepared everything for starting a business' (65.5%), 'despite failure, I will continue to create my own business until I succeed' (67.3%) and 'even if there is strong rejection from parents, I will still commit to starting my business' (70.9%). These insights are indicative of an appreciable level of entrepreneurial intention amongst the participants in this survey.

5.2. Factor analysis

The conceptualised factors (PEE, PRACCC, PCLT and SEI) in the study were examined for reliability and validity. For the former, Cronbach's alpha, standard deviation and factor mean were calculated for each factor. All the Cronbach's alpha estimates realised were above the 0.70 benchmark indicating that they are satisfactory going by the stipulations of Nunnally and Bernstein (1994), Streiner (2003) as well as Cohen and Swerdlik (2010). Following that, validity for all factors was estimated by checking the extent to which the conceptualised constructs are uni-dimensional (load onto the factor). In other words, factor analysis was performed in this study to confirm that as suggested by Kline (1994), the utilised items (variables) actually measure the conceptualised constructs.

Principal Component Analysis (PCA) was also performed in this study and the loading estimates achieved for each item compare favourably with the 0.8 benchmark prescribed by Field (2005). Based on the conceptualisation in this study, each construct (factor) was analysed separately and SPSS was compelled to extract only one factor in the analysis of every conceptualised construct. As shown in Table 4, in addition to the factor loadings, other statistics for each factor are satisfactory and confirm that the utilised variables are satisfactory measures of the conceptualised constructs.

The overall evidence for conceptualised factors supports the conclusion of uni-dimensionality of the factors. Thus, satisfactory reliability and validity estimates have been achieved in this study.

5.3. Regression analysis

Having confirmed reliability and validity of the factors, multiple linear regression analysis was performed to gauge the association between students' perception of entrepreneurship education (PEE), perceived relevance and adequacy of curriculum and course content (PRACC), perceived competence of lecturing team (PCLT) and the dependent variable of entrepreneurial intention (SEI). Regression model summary as contained in Table 5, shows satisfactory results at adjusted R^2 of 0.87, F-Change of 122.104, and Sig. F-Change of 0.000. The results suggest a highly significant positive association of PCLT, a marginally insignificant (positive) association of PEE, and a non-significant association of PRACC with the SEI of the explored population. Thus, at a 95% confidence level, while support is found for hypothesis 3 (H_3), no support was found for hypotheses 2 (H_2) and (H_1). It is however instructive to note that the relationship between PEE and SEI would be deemed to be statistically significant if the decision was based on a 90% confidence level, given its p-value of 0.071.

Some diagnostic tests were conducted to determine the appropriateness of the linear regression coefficients for this study. As advised by Cook (1979), influence diagnostics were undertaken and they show that the coefficient estimates reported in Table 5 were not affected by outliers. In deference to the thoughts of Draper and Smith (1981), residual plots were also examined and the results obtained support the assumptions of normality, linearity and homoscedasticity. Field (2005:170) contends that "there should be no perfect linear relationship between two or more of the predictors" in a regression analysis. To confirm uni-dimensionality of the predictors (independent variables) in this study, some multicollinearity checks were undertaken. Preliminary check for multi-collinearity was conducted that entailed examining the correlation matrix, and no multicollinearity threat was found, since there were no substantial correlations (*R* was above 0.8 or 0.9) found between predictors and outcomes.

Further to ensure that the regression estimates are free from collinearity pollution, a sensitivity analysis was undertaken to investigate the significance of influence of the inter-construct-correlation (as shown in the multi-variable regression table) on the individual constructs' coefficient and P values. The univariate and multivariate results were compared, in unity with the collinearity results. The application of the Belsley, Kuh and Welsch test for multicollinearity revealed that, for every independent variable, the condition index was less than 15 (see Table 6).

Table 5
A summary of regression analysis results (n = 125) *.

	Standardised Coeff. Beta	t-value	Sig.	Collinearity Statistics Tolerance	VIF
(Constant)		.000	1.000		
PEE	.261	1.843	.071	.120	8.357
PRACCC	.045	.264	.793	.114	8.936
PCLT	.664	6.055	.000	.200	5.011

Regression model summary: adjusted $R^2 = 0.87$ F-Change = 122.104 Sig. F-Change of 0.000.
* Dependent Variable = Entrepreneurial Intention.

These results indicate that the regression coefficients reported in Table 5 were not seriously distorted (or impaired) by multicollinearity (Belsley, Kuh & Welsch, 1980; Johnston, 1984). Finally, to account for 'more subtle forms of multicollinearity that are usually ignored by the ball park approach (Field, 2005, p. 175), further measures of collinearity diagnostics were checked. Analytical results (see Table 5) show that variance inflation factor (VIF) ranged from 5.0 to 8.9 and the tolerance levels ranged between 0.11 and 0.20. Thus, there is no multicollinearity threat as Myers (1990) opines that such a threat is present only when VIF exceeds 10 and according to Field (2005) when the tolerance value is 0.10 or less.

6. Discussion and conclusion

The importance of understanding the influence of entrepreneurship education on entrepreneurial intentions by encouraging creative thinking is increasingly underlined in the literature (Fayolle & Gailly, 2015; Ferreira, Fernandes, & Ratten, 2017). This current study, one of very few contributions from a non-Western context, offers insights that move knowledge forward in this theoretical domain. Importantly, the purpose set out for this current study has been to understand entrepreneurial intention and its antecedents in the explored context. Within that aim, a further goal was to understand how students perceive entrepreneurship education, the curriculum and course content, as well as the competency levels of the lecturing team.

The results indicate that most of the respondents concurred to statements that sought to gauge the extent to which they perceived entrepreneurship education to be valuable. Of the ten items with statements on the PEE scale, the worst mean score obtained was a 2.418 associated with the statement that 'entrepreneurship reduces poverty' which reflects an almost-neutral position on the part of the respondents. Positive responses were also evident for the two other independent variables of PRACC and PCLT. Given that all of the mean scores are in the range of 1 ('strongly agree'), 2 ('agree') and 3 ('neutral'), it is obvious that no dissenting opinions were canvassed by the respondents with respect to the scale items that were all positively framed. Taken together, the combined effect of the three independent variables in this study explains 87% of the variance in student entrepreneurial intention ($R^2 = 87\%$). These insights reinforce prior literature that acknowledges the motivating role of entrepreneurship education on entrepreneurial activity among young people (see Remeikiene et al, 2013), promoting increasing employment rate (World Bank, 2014) and propelling economic growth, innovation and employment (Giacomin et al., 2011). These insights thus re-echo the pertinence for entrepreneurship education to be embedded in the academic training offered at universities, especially in the sub-Saharan African context that is seemingly plagued by increasing unemployment rates.

Regression results for the hypothesised relationships support the projection that there is a relationship between perceived competence of lecturing team and student entrepreneurial intention. Statistically, the current result indicates that a 1% increase in the competence of lecturing team will lead to 0.66% increase in student entrepreneurship intention. Based on this empirical finding, this study suggests a highly positive association of competence of lecturing team to student entrepreneurial intention (Beta = .664 and $P = 0.00$ and $t = 6.055$). Thus, ensuring a competent lecturing team is critical to galvanising entrepreneurial uptake. For the perception of entrepreneurship education, a narrowly insignificant result was found at Beta = .261, $P = 0.07$ and $t = 1.843$. This may suggest that PEE may after all significantly impact (positively) on entrepreneurial intention. With regards to the perceived relevance and adequacy of the curriculum and course content, the insignificant evidence is not surprising given the confusing statistical evidence captured in the descriptive results.

From the point of students' perception of the suitability of the academic programme and delivery components to drive entrepreneurial zeal, the empirical insights suggest that although students are convinced that entrepreneurial education would motivate entrepreneurial drive, a careful and purposefully aligned design and implementation is essential to achieve that impact outcome at the university where this study was carried out. Examining closely the descriptive evidence for the PRACC (see Table 3), the evidence from this study lends support to the contention that one's propensity to take up entrepreneurial activity would depend both on one's experience as well as systematic teaching approaches (Bechard & Gregoire, 2005).

Though not separated conceptually (relevance and adequacy), we invoked recent knowledge (Ahmad et al., 2018; Farashahi & Tajeddin, 2018) to gain a better understanding of the influence of PRACC on SEI and the roles played by the relevance and adequacy components. Following the advocacy by the aforementioned scholars who lauded the pertinence of more effort to enhance the understanding of the practicality of curriculum content as EI antecedent, we carried out a subtle examination of the curriculum content relevance and adequacy components. This advocacy is founded on the rationality that entrepreneurship teaching is purposed to galvanise entrepreneurial drive in individuals and also inspire innovativeness, skills and creativity in them (Ahmad et al., 2018). To facilitate that entrepreneurial drive, particular attention must be given, not only to relevance but also the adequacy of the entrepreneurial curriculum (Deale, 2016). To understand better the PRACC influence on SEI, a manual examination of the statistical results

Table 6
Collinearity diagnostics results [a].

Dimension	Eigen-value	Cond. Index	(Constant)	Variance Proportions		
				F1 PEE	F2PRACCC	F3 PCLTeam
1	2.786	1.000	.00	.01	.01	.02
2	1.000	1.669	.1.00	.00	.00	.00
3	.161	4.163	.00	.25	.02	.77
4	.053	7.222	.00	.73	.97	.20

[a] Dependent Variable = Entrepreneurial Intention.

for the relevance and adequacy features was undertaken. For each of the five measurement items of the PRACC construct, at least 62% respondents suggest positive curriculum features. To identify less positive features, we closely examined the responses for all items, excluding the 'neutral' responses. Respondents indicated that items 3, 5 and 7, which depict actions that reflect what lecturers are doing and incentives used to promote learning and enhance practical understanding (e.g. Ahmad et al., 2018; Hunt, 2009) are less positive features at 30.6%, 32.3% and 28.6% respectively. Based on this evidence, it would seem legitimate to conclude that the respondents perceive the level of adequacy of the curriculum content to be low. A much careful design of the curriculum and course content towards ensuring that all features that are critical to galvanising entrepreneurial awareness and drive are taken into consideration is therefore pertinent. Thus, while the findings from this study suggest a clear tendency of participants in this study to take up entrepreneurial activity based on their entrepreneurial education contents, it reminds of the importance of ensuring appropriately designed curriculum and competent lecturing team. Statistically, the perceived competence of the lecturing team plays an instrumental role in driving entrepreneurial uptake (Beta = .664 and $P = 0.00$ and $t = 6.055$). A committed effort must therefore be made to optimise entrepreneurial uptake by ensuring adequately competent lecturing team to impact core technical and motivational skills.

7. Implications and future research

The insights from this study have implications which are distilled along three themes: theoretical implications, policy implications, and study limitations and future research.

7.1. Theoretical implications

Theoretically, this study offers insights that enhance the discourse on entrepreneurial intention by conceptualising and empirically testing the antecedents of students' entrepreneurial intention. Subsequently, this study provides empirical evidence that underlines the significant role that perception of entrepreneurial education and perceived competence of lecturing team play in driving entrepreneurial intention amongst student. Empirically, the more the lecturers show interest in teaching the course, encourage students to participate in entrepreneurial related activities, and starting their own business etc, the more the entrepreneurial uptake intention amongst students. This significant relationship is consistent with extant literature that associates competence of the lecturing team with high entrepreneurial intention of students (Ahmad et al., 2018; Bignotti & Le Roux, 2016; Hunt, 2009). The school system in South Africa can facilitate student access to entrepreneurship by supporting lecturer's competence with career fairs and employer talks. This opportunity would significantly benefit university students from disadvantaged families who lack basic information about the labour market.

Over the last three decades, the development of entrepreneurial activities within universities globally has gained increasing scholarly attention (Ferreira et al., 2018). As they further comment, these 'entrepreneurial universities' are indeed embracing their role of contributing to economic development, additional to their primary mission of teaching and research (p.1). This current study enhances this notion of universities increasingly embracing their role as motivators of entrepreneurial drive and economic development.

Etzkowitz, Webster, Gebhardt, and Terra (2000) note that entrepreneurial universities must embark on entrepreneurial actions, while Turpin and Garrett-Jones (2001) add that the task of universities is becoming more critical in society's knowledge production system. Elaborating on this critical task, Ferreira et al. (2018) flag two principal ways that entrepreneurial universities enhance the academic entrepreneurial capability: creating applicably skilled human capital, and transfer of knowledge from academia to industry. The emergent insights from this current study support and extend these foundations. First, this study contends that entrepreneurial universities would contribute to creating competently skilled human capital as well as play its knowledge transfer function to the industry. Enhancing that foundation, this study also contends that the extent to which entrepreneurial universities are able to effectively play the academic entrepreneurial capability enhancement role would hinge on two main factors: adequacy of curriculum and course content, and competence of the lecturing team. This study draws attention to the pertinence for such entrepreneurial universities to carefully ensure academic curriculum that would drive the entrepreneurial uptake propensity of students, on the one hand, and the pertinence to have a competent lecturing team to effectively implement the desired entrepreneurial drive motivation and economic development. With regards to curriculum and course content, this study underlines the importance for ensuring not only relevance but also adequacy of curriculum towards boosting entrepreneurial mindset (e.g. Ahmad et al., 2018; Gelaidan & Abdullateef, 2017). Finally, this study draws attention to the fact that in some cultural settings ensuring adequate curriculum and course content, as well as competent lecturing team, may not be sufficient to propel entrepreneurial ambitions. For example, an examination of the responses for entrepreneurial intention in tandem with relevance and adequacy of curriculum and course content, as well as competency of lecturing team, based on the nationality demographic captured interesting insights. Two (Asian) and one (South American) heritage students (see Table 1) indicated very low entrepreneurial intention although they are highly convinced about the relevance and adequacy of the curriculum and course content, as well as competency of the lecturing team.

7.2. Policy implications

The importance attached to entrepreneurship education has been emphasised in several studies especially on the grounds that entrepreneurship education has a visible link to entrepreneurship intention (Gelaidan & Abdullateef, 2017; Maresch, Harms, Kailer, & Wimmer-Wurm, 2016). The economy of South Africa needs to grow at a rate of 5–6% in order for the scourge of unemployment to be

reasonably dealt with (Mkentane, 2018). To assist with this, it is important that self-employment is encouraged by universities and governments and subsequently embraced by many. A major implication of this study with respect to policy is for managers of educational establishments as well as government departments in charge of higher education to seriously consider the introduction of entrepreneurship as a discipline in courses that are taught at universities. Our findings thus offer some justification for the further development of entrepreneurship-related subjects in universities and colleges. To fully optimise the entrepreneurial drive and economic development impacts, policy makers and academic practitioners must work harmoniously together to design academic curriculum and course content that incorporates the relevant theoretical ingredients to motivate entrepreneurial drive. To optimise the entrepreneurial mindset motivational impact, particular attention must be given to ensuring relevance and adequacy of curriculum and course contents. Essentially, practical incentives that promote learning and the enhancement of practical entrepreneurship understanding must be embraced. In addition, South African universities must ensure a proficiently competent team in the academic programme. This study has also revealed a tendency for cultural features to influence the extent to which individuals may be motivated to engage in entrepreneurial activity. Policy makers should also take that fact into consideration.

7.3. Limitations of the research and future research directions

Our study did not dwell on any particular didactics that are used in the teaching of entrepreneurship, albeit some items (such as *Entrepreneurship education enhances creative and innovative ideas; Entrepreneurship education helps in reducing numbers of failed businesses; Entrepreneurship education equips graduates with business creation skills*. Furthermore, we recognise the context-related limitation of this study. This study is based on data collected from 125 students (3rd and 4th year) at a South African university. A final limitation of this study relates to the relevance and adequacy of curriculum and course content construct where the conclusion regarding the demarcation of the associational influence of the relevance and adequacy components was based on descriptive evidence.

Future research should therefore aim to address the aforementioned limitations of this study. For example, it may be prudent for a future study to consider the effect of different or particular didactics on entrepreneurship intention. Second, in this study, entrepreneurial intention was largely considered to be a function of the student's perception of entrepreneurship education, relevance and adequacy of the course content and competency of the lecturing team. In reality, other mediating factors such as the learning environment and facilities may impact learning outcomes either directly or through any of the relational variables measured in this study. Future research should aim to expand knowledge in these regards. Further in that connection, based on limited descriptive evidence, this study has suggested that cultural background of individuals may influence the extent to which they may be motivated to engage in entrepreneurial activity. More illumination of this influence is pertinent. Further on the influence perspective, more attention should be focused on understanding the demarcation in the influence of the relevance and adequacy components of the PRACC construct. While a demarcation of the relevance and adequacy components of this construct was not conceptualised, a subtle examination of the descriptive statistics flags insights that should be validated in future studies. Future research that aims to contribute to the understanding of the influence of course and curriculum content (demarcating also the adequacy and relevance components), as well as perceived competence of lecturing team, on entrepreneurial intention of students is essential. Furthermore on the adequacy and relevance components of course and curriculum content, a clear investigation of their individual effects on entrepreneurship intention using improved measurement instruments is pertinent.

A review of mainly Western literature points to an increasing empirical attention being given to entrepreneurial education, a trend that finds contrast in the sub-Saharan Africa (SSA) context. There is need for a committed effort to combat the increasing unemployment wave in South Africa and SSA in general. More effort is required in the area of enhancing the contribution of entrepreneurial activity to economic development. A committed research drive is therefore required to examine how universities are playing their roles in driving entrepreneurial intention and economic development impact of entrepreneurial activity.

Finally, this study explored entrepreneurship education and entrepreneurial intention impact using data from a South African university. In addition to enhancing the conceptual framework for this study, future research should consider other factors beyond the conceptualisation in this current study, as well as utilise other methodological strategies to enhance knowledge from the South African context as well as other African countries. The sample size limitation of this study should also be addressed in future research.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijme.2019.03.007.

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