Students Perception on the Entrepreneurship Curriculum at the University of South Africa's Department of Agriculture and Animal Health

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ABSTRACT Entrepreneurship continues to assume a vital role in the South African economy as well as the economies of many developing nations across the globe. The creation of new business activities has become a major driver in the economy. South Africa has a high number of unemployed graduates in the agricultural sector across all disciplines. However, there has been a pervasive culture in the South African education system that when agricultural students complete their programmes at universities they prefer to work for government as extension and advisory services personnel, at research institutions and other related sectors. The study was conducted to assess whether the training provided as part of the curriculum creates opportunities for entrepreneurship for both undergraduate and postgraduate students at the University of South Africa (UNISA) within the Department of Agriculture and Animal Health. Work-integrated learning (WIL) offers students the chance to learn more about the working environment. There is unwillingness on the part of female students to become entrepreneurs. The Limpopo and KwaZulu-Natal provinces have a large number of students who are interested in entrepreneurship. The curriculum offers students training in innovation and organisational skills, but it is apparent that this programme does not assist in the development of students to embrace entrepreneurship. Students are not prepared to start their own businesses after completing of their studies, however, they prefer to work full-time while running their own businesses part-time.

INTRODUCTION

Strategic entrepreneurship is a process through which individuals identify opportunities, allocate resources, and create value (Turker and Selcuk 2009). Thus, entrepreneurship is simply seen as a function of the ability of an entrepreneur to see the opportunities in the market place, initiate change and to create value through solutions (Webb et al. 2014). This creation of value is often through the identification of unmet needs or through the identification of opportunities for change. An entrepreneur generally sees "problems" as "opportunities" and then takes action to identify the solutions to those problems and to discern the customers who will be willing to pay to have those problems solved (Dunfee and Robertson 1988). Entrepreneurship has captured the attention of both scholars and policymakers (Cowling et al. 2014; Saeed et al. 2013).

It is generally known that the South African system of education is not geared towards en-

couraging entrepreneurship among the learners within higher education (National Department of Agriculture 2003). With the advent of the government's New Growth Path, which aims to create decent work, and concomitantly reduce inequality and defeat poverty, it has become even more important to encourage learners at high school level and after matriculating to engage in entrepreneurships. These objectives can also be achieved by adjusting the curriculum in order to instil an entrepreneurial mindset in citizens, and through the creative and collective efforts of all sections of South African society. Entrepreneurship also requires leadership from all corners of society, including university management, and within the South African syllabi which support or describe evidence of exploring entrepreneurship opportunities are lacking within South African universities, however, the current research will report on a study conducted to assess whether Unisa's the Department of Agriculture and Animal Health, which is part of the College of Agriculture and Environmental Sciences (CAES), agricultural students, both undergraduate and postgraduate, are provided

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with entrepreneurship opportunities within the curriculum during training.

Objectives

This study proposes the following research questions: (1) How do Unisa's agricultural students perceive entrepreneurship curriculum towards their post graduate innovation and work platforms?; (2) Does entrepreneurship curriculum have an impact on students?; (3) How can the College of Agriculture and Environmental Sciences be more effective in their provision training and assessment towards students entrepreneurship skills?

METHODOLOGY

A descriptive survey design was used to identify and describe students' perceptions of entrepreneurial learning and interest in the integration of entrepreneurship in the curriculum. The participants include agri-entrepreneurs with no agricultural qualifications, third-year students studying for the national diploma in agriculture, graduates who have completed their diplomas in 2011, third-year students registered for the BA/BSc of Agriculture degree and graduates who have completed their BA degrees in 2011. Entrepreneurs in the agricultural sector who do not have formal academic qualifications were used as a reference check to test whether formal higher education in agriculture had any influence on entrepreneurship skills and attributes. These entrepreneurs were interviewed during farmers' days and workshops organised by the national and provincial Department of Agriculture in South Africa.

Demographic type questions asked for students' age, ethnic group, level of education, about their background in farming, locality and province, family involvement in farming or entrepreneurship and knowledge of friends or family's involved in entrepreneurship. The students were also asked about their understanding of entrepreneurship and its attributes, and whether they had ever considered wanting to own their own business. Students were also asked if the training, assessment and work-integrated learning (WIL) module (particularly for diploma students) had instilled entrepreneurship. The student entrepreneurship question posed was whether the student had ever considered want-

ing to own his/her own business. This information was used in a multivariate analysis to determine whether students can be targeted for recruitment into such a curriculum in the near future.

The majority of the questions posed were structured to assess the overall understanding of entrepreneurship, training and assessment around the curriculum, attributes of the curriculum and the strength of the curriculum provided by CAES: Department of Agriculture and Animal Health, including assessments and weighting, practical, work-integrated learning (WIL) and entrepreneurship as a career choice.

Empirical Model

The model for non-parametric analysis was used to assess whether students can be targeted for recruitment into an entrepreneurship curriculum. The empirical model adopted by Parcel and Syluta (2003) and Reynolds et al. (2002) were used to assess students' interest in owning their own business. This method was denoted as follows:

(1)   I have considered wanting to own my own business=

$f \Sigma \iota$, gender, age, Σj major, entrepreneurship as a career choice)

The dependent variable is set as a 0 or 1 binary variable where a 1 is equal to "I agree", "I have considered owning my own business". The background variable is a series of dummy variables for i=farm, rural (non-farm), suburban, urban; farm is the default= farm. Gender is specified as a 0 or 1 binary with female or male. The age variable is the respondent's age, and was used instead of year at university to remove any co linearity. A series of variables were set to specify the major subjects and were indicated thus: j=Agricultural Economics, Plant Science, Animal Science, and Agricultural Economics.

Sampling Methods

In this study a convenience sampling of students attending practical classes and WIL in agriculture and total population of 200 students were used. Purposive sampling was used to select entrepreneurs in the agricultural sector who are already farming. The undergraduate and postgraduate ("students who have recently completed in 2011") students were given questionnaires with a five-point Likert scale 1-5.

The Questionnaire

Self-administered questionnaires were used for the study and the most common way of distributing these questionnaires was via e-mail and physically distributing them to the students and entrepreneurs. The total population for this study were 200 students and 100 agri-entrepreneurs.

Data Analysis

Descriptive statistics were used to determine the profile of the respondents. Frequency tables, content analysis, and logit interpolated probabilities were used to describe the results. Hence, inferential statistics were also used to determine the relationship between respondent data or outcomes and variables. Statistical procedures were based on their applicability to the exploratory nature of the research design. The statistical analysis was carried out using the SAS system, Version 9.1, statistical package (SAS Institute 2003). A statistical model, based on a likelihood ratio (LR), was also conducted. This ratio was defined as follows: LR = 2(Log TR-Log LU), where Log LU was defined as a log – likelihood for the unrestricted model and Log TR was log-likelihood for the model with K parametric imposed.

RESULTS

Quantitative Analysis from Agri-entrepreneurs

Age: A total number of 60 agri-entrepreneurs returned the questionnaires. The majority of them were above 30 years of age (50%), followed by famers of between 26 and 30 years (33.3%) of age. Only 16% of the farmers were 21-25 years old (Table 1).

Gender: The majority of famers interviewed were male (83.3%) and 16.6% were female.

Locality: In terms of South African dwelling conditions three categories were differentiated, namely: rural, urban, and semi urban. The majority of the respondents were from rural (52%) and semi-urban (42%) areas. The lowest number of respondents were from urban areas (1%) and the difference between the highest and lowest was 8%.

Quantitative Analysis from Students Interviewed at the Department of Agriculture and Animal Health

Age in Years: The total number of respondents interviewed were 140 (n=140) and the variables for descriptive statistics were age, gender, education levels, work experience, locality, province as well as field of study (Tables 2 and 3). Of the 140 interviewees 4.3% were below 20 years of age. The majority of the respondents were between 21 and 25 years old, 45.0%, while 20% were between 26 and 30 years old. Those over the age of 30 years counted 30.7%.

Gender: Results in Table 2 also show that the majority of the respondents were male, 51.4%, and 48.6% were female. The difference between the highest was 8.0.

Education Levels: The education levels of the respondents were divided into four distinct groups in order to get precise data about the respondents with regard to their level of education, that is., undergraduate, graduate, undergraduate working and graduate working. The majority of the respondents were undergraduates (45.0%) followed by undergraduates working (37.9%). The lowest number of respondents was from graduates and working (7.1%). Stu-

Table 1: Grouped frequency of agri-entrepreneurs

Independent variable	Frequency	Percent	Valid percent	Cumulative percent
Age				
<20 yrs	0	0	0	0
21-25 yrs	10	16	16	20
26-30 yrs	20	33.3	33.3	82
>30 yrs	30	50	50	100
Gender				
Male	50	83.3	83.3	59.4
Female	10	16.6	16.6	100
Locality				
Rural	25	50	42	67.1
Urban	5	1	1	30.1
Semi-urban	30	42	50	100

Table 2: Grouped frequency tables and percentages of all variables measured

Independent variable	Frequency table	Percent	Valid percent	Cumulative percent
Age				
<20 yrs	6	4.3	4.3	4.3
21-25 yrs	63	45	45.0	49.3
26-30 yrs	28	20.0	20.0	69.3
>30yrs	43	30.7	30.7	100
Gender				
Male	72	51.4	51.4	51.4
Female	68	48.6	48.6	100.0
Education Levels				
Undergraduate	64	45.7	45.7	45.7
Graduate	13	9.3	9.3	55.0
Undergraduates and working	53	37.9	37.9	92.9
Graduate and working	43	7.1	7.1	100.0
Work Experience				
<0 yrs	76	54.3	54.3	54.3
1-5 yrs	24	17.1	17.1	71.4
6-10 yrs	22	15.7	15.7	87.1
>10 yrs	18	12.9	12.9	100.0
Locality				
Rural	59	42.2	42.2	42.1
Urban	50	37.5	37.5	77.1
Semi-urban	31	22.1	22.1	100.0
Province				
Limpopo	26	28.6	28.6	18.6
Mpumalanga	20	14.3	14.3	32.9
Gauteng	21	15.0	15.0	47.9
North West	8	5.7	5.7	53.6
Northern Cape	5	3.6	3.6	57.1
KwaZulu-Natal	36	25.7	25.7	82.9
Western Cape	8	5.7	5.7	88.6
Eastern Cape	10	7.1	7.1	95.7
Free State	6	4.3	4.3	100.0
Area of Study				
Agric Economics	24	17.1	17.1	17.1
Plant Sciences	39	27.9	27.9	45.0
Animal Sciences	35	25.0	25.0	70.0

dents who graduated in 2011 were 9.3%. The differences between the highest and lowest were 37.9%.

Work Experience: Those with work experience were grouped into four distinctive groups, that is, 0 (never worked), 1-5 years work experience, 6-10 work experience and, lastly, more than 10 years work experience. The majority of the respondents had no work experience (54%), followed by respondents who had 1-5 years work experience, 17.1%. Respondents who had work experience of between 6 and 10 years were 15.7%, followed by respondents who had more than 10 years work experience.

Locality: In terms of South African dwelling conditions, three categories were differentiated, namely; rural, urban and semi-urban. The majority of the respondents were from the rural areas (42%), followed by urban (37.0%). Lowest number of respondents was from semi-urban areas, 22.1%.

Provinces: The study comprised all nine provinces in South Africa. The highest number of respondents were from the Limpopo province (28.6%), followed by KwaZulu-Natal (25.7%), Gauteng (15%), and Mpumalanga (14.3%). The lowest number of respondents was from the North West (5.7%), Northern Cape (3.6%), Western Cape (5.7%), Eastern Cape (7.1%) and Free State (4.3%).

Field of Study: The field of study comprised four disciplines. These include: Agricultural Economics, Plant Science, Animal Science as well as Animal Health. Animal Science had the highest percentage, 30.0%, followed by Plant Science (27.9%). Agricultural Economics had 17.1% and Animal Science had 25%. The difference between the highest and lowest percentage was 12.9%.

Table 3: Description of variables

Variables	Mean	Std. dev	Variance
Dependent Variable:			
Enrolled number of students interviewed (Y)			
Total number of students			
Independent Variables:			
Age			
1=<20yrs; 2 = 21-25yrs; 3 = 26-30yrs; >30yrs	2.7714	0.93948	0 .883
Gender			
1=Male; 2; Female	1.4857	0.50159	0.252
Education Level			
1=Undergraduate; 2=Graduate; 3=Undergraduate working; 4=Graduate	2.0643	1.06082	1.125
Work Experience			
1= no experience; 2=1-5 yrs; 3= 6-10yrs; 4=>10 yrs	1.8714	1.09835	1.206
Ethnic Group			
1=Black; 2=White	1.1571	0.36524	0.607
Locality			
1=Rural; 2=Urban; 3=Semi- urban	1.8000	0.77923	0.607
Province			
1=Limpopo; 2= Mpumalanga; 3=Gauteng; 4=North West; 5= Northern Cape; 6=KzN; 7=Western Cape; 8=Eastern Cape; 9=Free State	4.2286	2.48548	6.178
Area of Study			
1=Agri Economics;2=Plant Science; 3=Animal Science; 4=Animal Health	2.6786	1.08135	1.169

N (List wise) = 140

Age: Table 4 denotes the percentage profile of the students cross tabulated response of the students registered in 2012 as well as students who have recently completed the national diploma in agriculture and students who have completed the BSc Agriculture degree, irrespective of qualifiers, within the CAES Department of Agriculture and Animal Health. The variable age groups were as follows: < 20 years, 21-25 years, 26-30 years and >30 years.

The results of this study revealed that more than 12.5% of the third-year students registered for the national diploma in 2012 were below 20 years of age. The highest percentage of students was 21-25 years of age (70.8%). The lowest percentage of students (8.3%) was 26-30 years old or more than 30 years old, respectively.

Only 1.9% of the students who had graduated with a national diploma in 2011, were under 20 years of age. The number of students who were 21-25 years counted 38.9%, and 18% of were 26-30 years old. A high percentage of the students (40.7%) are older than 31 years of age. Students who were registered for the Bachelor degree in 2012 were all above 30 years of age, 100%. The percentage of students below 20

years were 2.0% and 25.0% were between 21 and 25 years of age. The students aged between 26 and 30 years counted 16%. Students who have completed the bachelor's degree in 2011 were older than 30 years of age, 27.0%.

Gender: The results of the study revealed that of the number of third-year students registered for the national diploma in 2012, 45.8% were male and 54.2% female. Of the students who have completed their diplomas in 2011, 53.7% were male and 46.3% female. Of the students registered for the bachelor's degree in 2012, 33.3% were male and 66.7% female. Of the students who completed the bachelor's degree in 2012, 52% were male and 47.5% female.

Work Experience: The results showed that 95.8% of the third-year students registered for the national diploma in 2012, had no work experience and only 4.2% had 6-10 years work experience. Of the students who had graduated with a national diploma in 2011, 27.8% had no work experience and 33.3% had experience ranging from 1-5 years, while 22.2% have work experience of 6-10 years. Only 16.7% of the respondents have more than 10 years work experience. Of the third-year bachelor's degree students who have registered in 2012, 33.3% of the respon-

Table 4: Percentage profile of students cross tabulated response to survey on agricultural entrepreneurship

Variables measured	3rd year students diploma 2012	% of responded	Diploma graduated in 2011	% of responded	Bachelor degree 3rd year 2012	% of responded	B degree completed 2011	% of responded
Age								
<20 years	3	12.5	1	1.9	0	0	2	2
21-25 years	17	70.8	21	38.9	0	0	25	25
26-30 years	2	8.3	10	18.5	0	0	16	16
>31 years	2	8.3	22	40.7	3	100	16	27.1
Gender	24		54		3		59	
Male	11	45.8	29	53.7	1	33.3	31	52.5
Female	13	54.2	25	46.3	2	66.7	28	47.5
Work Experience								
0	23	95.8	15	27.8	0	0	38	64.4
1-5 years	0	0	18	33.3	1	33.3	5	8.3
6-10 years	1	4.2	12	22.2	2	66.7	7	11.9
>10 years	0	0	9	16.7	0	0	9	15.3
Ethnic Group								
Black	24	100	33	61.1	3	100	58	98.3
White	0	0	21	38	0	0	1	1.7
Locality								
Rural	8	33.3	20	37.0	2	66.7	29	49.2
Urban	8	33.3	21	38.9	0	0	21	35.6
Semi-urban	8	33.3	13	24.1	1	33.3	9	15.3
Province								
Limpopo	5	20.8	6	11.1	1	33.3	14	23.7
Mpumalanga	1	4.2	10	18.5	1	33.3	8	13.6
Gauteng	4	16.7	5	9.3	0	0	12	20.3
North West	0	0	7	13.0	0	0	1	1.7
Northern Cape	0	0	5	9.3	0	0	0	0
KZN	11	45.8	8	14.8	1	1.7	16	27.1
Western Cape	1	4.2	6	11.1	0	0	1	1.7
Eastern Cape	2	8.3	3	5.6	0	0	5	8.5
Free State	0	0	4	7.4	0	0	2	3.4
Area of Study								
Agriculture Economics	7	29.2	3	5.6	2	66.7	12	20.3
Plant Science	10	41.7	7	13.0	0	8.3	22	37.3
Animal Science	7	29.2	8	14.8	1	33.3	19	32.2
Animal Health	0	0	36	66.7	0	0	6	10.2

N (List wise) = 140

dents had work experience of 1-5 years and 66.7% have 6-10 years work experience.

Of the respondents who have completed the Bachelor degree in 2011, 64.4% had no work experience. Only 8.3% of the respondents had work experience of between 1-5 years. Only 11.9% had work experience ranging from 6-10 years. Only 15.3% of the respondents had more than 10 years work experience.

Of the third-year students registered for the national diploma in 2012, 100% of the respondents are Black, while in 2011, 61.1% of the students who had graduated are Black and 38.0% White. In 2012, 100% of the third-year students who registered for the bachelor's degree are Black, while 98.3% of those who completed the Bachelor degree in 2011 are Black and 1.7% White. An equal number of third-year students, registered for the diploma in 2012 live in rural, urban and semi-urban areas, 33.3%. However, of those students who graduated with a diploma in 2011, 37.0% are from the rural areas, while 38.9% are from the urban and 24.1% from semi-urban areas. Of the students registered for the bachelor's degree in 2012, 66.7% are from the rural areas and 33.3% from semi-urban areas. Of the respondents who have completed the bachelor's degree in 2011, 49.2% are from the rural areas, 35.6% from urban areas and 15.3% from semi-urban areas.

The majority of the third-year students registered for the national diploma in 2012 are from KwaZulu-Natal (45.8%), followed by Limpopo (20.8%) and Gauteng (16.7%). The lowest percentage are from the Western Cape and Mpumalanga (4.2%) followed by the Eastern Cape. There were no respondents from the North West, Northern Cape and Free State.

Of the students who graduated with a national diploma in 2011, 11.1% are from Limpopo, 18.5% from Mpumalanga, 9.3% from Gauteng, 13.0% from the North West, 9.3% from the Northern Cape, 14.8% from KwaZulu-Natal, 11.1% from the Western Cape, 5.6% from the Eastern Cape, and 7.4% from the Free State.

Of the students registered for the degree in 2012, 33.3% are from Limpopo and Gauteng and 1.7% from KwaZulu-Natal. Other provinces had no students who responded. Of the students who completed the bachelor's degree in 2011, 23.7% were from Limpopo, 13.6% from Mpumalanga, 20.3% from Gauteng, 1.7% from the North West province, 27.1% from KwaZulu-Natal, 1.7 from the Western Cape, 8.5% from the Eastern Cape and 34.4% from the Free State, respectively.

Of the students who had registered for the National Diploma in Agriculture in 2012, 41.7% specialised in Plant Science, 29.2% in Animal Science and 29.2% in Agricultural Economics. Of the students who graduated with a national diploma in 2011, 13.0% specialised in Plant Science, 14.8% in Animal Science, 5.6% in Agriculture Economics and the majority, 66.7%, in Animal Health. Of the students registered for the bachelor's degree in 2012, 66.7% specialised in Agriculture Economics, 8.3% in Plant Science, 33.3% in Animal Science and Animal Health had no respondents.

Of the students who completed the national diploma in 2011, 20.3% specialised in Agriculture Economics, 37.3% in Plant Science, 32.2% in Animal Science and 10.2% in Animal Health.

The phi value analysis was used to determine if it would yield significant values to measure the degree of association between both independent and dependent variables. The results in Table 5 demonstrate that descriptive variables such as age and province show a significant relationship or association between dependent variables, that is, third-year students registered for the national diploma in 2012, students who graduated with a national diploma in 2011, third-year students registered for the bachelor's degree in 2012 and students who completed the B degree in 2011 (P<0.01).

There is also a significant relationship between the curriculum to be innovative, encouragement as well as taking as well as organisational skill to students, irrespective of whether they have completed or are completing their qualifications.

Table 5 also denotes a close relationship between the strength of the curriculum in the provision of appropriate skills, opportunities for employment as well as a chance for students to realise their full potential in education and government.

Table 5 indicate that there is a close and significant relationship in students having organisational skills to run their own business as well as the attribute to be risk-takers. There was a significant relationship between students interviewed to take entrepreneurship as a career choice.

The results of the estimated coefficient for the linear regression, presented in Table 6, showed that out of thirty three (33) independent variables, only five (5) independent variables had significant impact. The impact of the lecturer who is teaching the subject entrepreneurship, the achievement of high grades or marks will also stimulate entrepreneurship, a curriculum that is innovative and offers organisational skills, students are committed to any business venture as part of entrepreneurship attributes from them as parts of career choice were significant. Additionally, the willingness for students to start their business after the completion of their studies was also significant.

The non-significant results were observed in the area of training and assessment. There was no evidence that training and assessment did not have a scope to develop skills, there is no engagement tutorial letters, work-integrated learning on entrepreneurship. The results in Table 6 also demonstrated that the binary logistic regression model showed that there is a significant effect when the curriculum is not resourceful, does not create, encourage creativity or develop visionary and independent thinkers. In all the variables under the strength of the curriculum, there were also no significant results in all measured parameters.

In order to test to establish whether the interviewed students have entrepreneurial at-

Table 5: The relationship or association between measured independent variables of students interviewed on entrepreneurship

Variables measured	Phi Sign. value	Cramer V's sign. value	Contingency coefficient sign. value
Age	0.003**	0.003	
Gender	0.841	0.841	0.841
Work experience	-	-	-
Ethnic Group	-	-	0.841
Locality	0.419	0.419	0.419
Province	0.026*	0.026	0.026
Area of Study	-	-	
Training and Assessments			
Curriculum			
Encourages and recognises and takes advantages	0.018***	0.018	0.036
Full of resourcefulness	0.206	0.206	0.206
Encourages creativities	0.199	0.019	0.019
Self-reliance	0.262	0.262	0.262
Innovation and organisation	0.007**	0.007	0.007
Encourages achievements in business and organisational skills	0.034*	0.034	0.034
Curriculum Strength			
Appropriate skills	0.047*	0.047	0.047
Teaches marketable skills	0.246	0.246	0.246
Engender the creativity of young entrepreneurs	0.297	0.297	0.297
Provide informal and formal education	0.094	0.094	0.094
Policies that encourages economic development	0.217	0.217	0.217
Opportunities of employment	0.003**	0.003	0.003
Provide opportunities for youths to realise their full potential	0.003**	0.003	0.003
Involves various partners in labour market			
1. Education	0.004**	0.417	0.417
2. Institution	0.417	0.004	0.004
3. Government	0.039*	0.039	0.039
Entrepreneurial Attributes of Unisa Student			
Organisational skills to run my own business	0.001***	0.001	0.001
Mobilise funding for my future	-	-	-
Committed to any business venture	-	-	-
Risk-taker	0.018***	0.018	0.018
Entrepreneurship as a Career Choice			
Running my own business	-	-	
Working full-time: running my own business	0.006*	0.006	0.006
Employee for a company before venturing into my business	0.033*	0.033	0.033
Entrepreneur studying	0.002***	0.002	0.002
Manage for other people's business	0.004***	0.040	0.004
Entrepreneur in future	0.041*	0.041	0.041

Likewise = 140: Highly significant at *** P<0.01 = Significant at *p<0.05 Ns=p<0.10;

tributes, the binary logistic regression showed that students are significantly committed to any business venture (P<0.05). However, the results showed no evidence that students have the organisational skills to run their own business, that they are able mobilise funding to capitalise their own business should they wish to do so in the future or that they are risk-takers.

Results in Table 6 also demonstrated that students preferred to manage other people's business. However, the results did not show any evidence of students who are prepared to start their own business. Interviewees suggested that

they would prefer full-time employment whilst running their own enterprises. Results in this study show evidence that students are interested in becoming entrepreneurs while they are still studying either for the undergraduate diploma or degree.

DISCUSSION

Entrepreneurial education produces more and better entrepreneurs as compared to other traditional programmes (Saeed 2013; Ronstadt 1985). Results reported by GEM findings (GEM

2002), conversely, showed a strong relationship between the level of education of an individual and the tendency to pursue entrepreneurial activities and, on the other hand, a strong positive relationship between the level of education of the entrepreneurs and level of business success. Results in Table 1 revealed that most agri-entrepreneurs are over 30 years of age, predominantly male (83.3%) and the majority of them are from the rural areas. Similarly, these results concur

with the findings of a report on the European Union that the majority of agri-entrepreneurs are male. Similarly, results in Table 2 also indicated that the majority of the people who have an appetite for agri-entrepreneurship are based in the rural areas.

Results in Table 2 demonstrated that descriptive variables such as age and province showed a significant relationship or association between dependent variables, that is, third-year students

Table 6: Parameters estimates of binary logistic regression model of students interviewed on entrepreneurship

Variables	B^z	Std err	B^y	Sign.	t
Training and Assessments					
Scope of development in curricula	0.048	0.124	0.035	0.702	0.383
Lectures teach entrepreneurship	-0.141	0.117	-0.126	0.029*	-1.208
Engagement in tut letter entrepreneurship	-0.029	0.110	-0.027	0.791	-0.265
Work-integrated learning	0.086	0.121	0.073	0.481	0.707
Highest marks/grades stimulate entrepreneurship	-0.252	0.096	-0.248	0.001***	-2.642
Curriculum					
Encourages and recognises and takes advantage	-0.109	0.141	-0.080	0.439	-0.777
Full of resourcefulness	-0.061	0.117	-0.057	0.606	-0.518
Encourages creativities	-0.132	0.161	-0.090	0.413	-0.821
Self-reliance	-	0.138	-	0.998	0.002
Innovation and organisation	0.520	0.152	0.384	0.001***	3.409
Encourages achievement in business and organisational skills	0.166	0.152	-0.120	0.277	-1.093
Curriculum Strength					
Appropriate skills	0.057	0.127	0.046	0.653	0.451
Teaches marketable skills	-0.100	0.131	-0.085	0.447	-0.763
Engender the creativity of young entrepreneurs	-0.190	0.177	-0.127	0.283	-1.077
Provide informal and formal education	-0.045	0.030	-0.134	0.131	-1.521
Policies that encourages economic development	-0.041	0.040	-0.098	0.304	-1.032
Opportunities of employment	-0.102	0.146	-0.083	0.485	-0.701
Provide opportunities for youths to realise their full potential	0.287	0.178	0.203	0.110	1.612
Involves various partners in labour market					
1. Education	0.123	0.195	0.094	0.530	0.629
2. Institution	-0.173	0.211	-0.139	0.413	-0.821
3. Government	0.093	0.163	0.080	0.568	0.572
Entrepreneurial Attributes of Unisa Student					
Organisational skills to run my own business	3.948	0.133	0.102	0.354	0.931
Mobilise funding for my future	0.124	0.144	-0.118	0.327	-0.984
Committed to any business venture	-0.142	0.128	-0.233	0.034*	-2.141
Risk-taker	-0.274	0.122	-0.037	0.716	-0.030
Entrepreneurship as a Career Choice					
Running my own business	-0.175	0.126	-0.011	0.903	-0.122
Working full-time: running my own business	-0.015	0.104	-0.038	0.682	-0.411
Employee for a company before venturing into my business	-0.043	0.051	0.078	0.366	0.907
Entrepreneur studying	0.013	0.110	0.012	0.905	0.120
Manage for other people's business	-0.235	0.096	-0.226	0.016**	-2.445
Entrepreneur in future	0.198	0.123	0.125	0.11	1.603

Diagnostic:
2 Log Likelihood = 75.278 B^z = Unstandardised coefficient
Cox and Snell R square = 0.786
Nagelkerk R square = 0.813 B^y = standardised coefficient
Durban-Watson = 0.888

Classification:
Strongly disagree = 35%
Disagree = 21%
Neutral = 10%
Agree = 30%
Strongly agree = 4%

Highly significant at *** P<0.01 = Significant at **p<0.05 Ns=p>0.05; Likewise = 140

registered for the national diploma in 2012, students who graduated with a national diploma in 2011, third-year students who were registered for the bachelor's degree in 2012 and those who completed their degrees in 2011 (P<0.01), and entrepreneurship. Based on the literature, there are three prominent models of natural tendency variables and this model proposes that demographic factors such as age, gender and race (ethnic group) impacts on the entrepreneurial decisions of the individual (Gupta et al. 2014; Hisrich and Brush 1998; Light and Resenstein 1995). Contrary to the findings of this study, Hisrich and Brush (1985) reported that the common catalyst to entrepreneurial activity among female entrepreneurs, especially married women, were push factors, such job dissatisfaction.

Results in this study also show that there is a close and significant relationship between the CAES, Department of Agriculture and Animal Health curriculum is innovative, encouragement as well as taking opportunities as well as organisational skills to students, irrespective of whether they have completed or are completing their qualifications. Brockhaus (1982) reported that individuals become entrepreneurs because of their unique personality traits and personal characteristics such as the need to achieve, a high internal locus of control, a propensity for risk-taking as well as personal values of independence. Similarly, the results in Table 4 indicate that the decision to become an entrepreneur is derived from the development of career anchors, and the fit between the individual skill sets and job requirements such as dynamic career and jobs requirements such as dynamic career move.

In contrast to the results reported by Ahamad et al. (2004), when considering their definitive career plans many students were preoccupied with short-term goals linked to the completion of their studies. Thus, of the 200 students interviewed, only 30% students responded that they will be running starting their own businesses immediately after graduation. Interviewees suggested that they would prefer to be employed full-time whilst running their own enterprises, or become an employee of any company while running their own business.

Parcel and Sykuta (2003) reported that students who have aspirations to own their own business have a personal connection to someone who is already an entrepreneur. The authors also reported that students feel more comfortable with risk-taking where they have witnessed the independence associated with self-employment. Thus, the connection to existing entrepreneurs is critical in the development and progress of developing future agri-entrepreneurs.

CONCLUSION

In the context of this study, it is clear that the curriculum presented at Unisa's CAES: Department of Agriculture and Animal Health is not appropriately developed to prepare students for entrepreneurship as a career option. Limpopo and KwaZulu-Natal has a large number of students who are interested in entrepreneurship. Highest grades or marks stimulate entrepreneurship as part of assessments. The curriculum is innovative and offers organisational skills, but it is apparent that this programme does not assist in the development of students to become entrepreneurs. Students are not prepared to start their own businesses after completing of their studies, instead they prefer to work full-time while running their own business. Students also prefer to be employees in a company or to manage other people's businesses before they venture into establishing their own businesses. Students are also interested in becoming entrepreneurs at some stage in the future. Future research should be conducted to determine the perceptions about entrepreneurship in selected high schools, among teachers and students in private and government schools, and further education and training colleges as well as universities in South Africa.

RECOMMENDATIONS

In as much as the college of Agriculture and Environmental Science: Department of Agriculture and Animal Health offers innovative and organisational skills, but the programme per se does not assist in the development of student to become entrepreneurs. Approaches towards improvement of learners' ability to be entrepreneurs should be well integrated in the curriculum, with collaboration with other well established agricultural enterprises.

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