



Willingness and Motivation of Nigerian Youth to Pursue Agricultural Careers after Graduation

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Abstract

Sub-Saharan Africa (SSA) has the world's highest proportion of young population and there has been widespread interest in and calls for engaging this youth in agricultural occupations for achieving sustainable agricultural development and food security in the region. Yet, very little is known if the youth themselves are willing to take up such employments and what would motivate them to do so. We investigated these questions in the context of Nigeria. A questionnaire was designed with insights from the Expectancy-Value Theory of motivation. Data were collected from over nine hundred undergraduate students of agriculture in four Nigerian universities to investigate their willingness and motivations to pursue an agricultural career after graduation and analysed using descriptive statistics and Principal Axis factoring. Vast majority of the students were willing to pursue an agricultural career and self-employment based on agricultural production was their most preferred choice, which varied according to gender, rural vs. urban residence, and study programmes. Both Success Expectancy (perception of own ability/competence to perform agricultural tasks) and Utility Value (usefulness of agriculture to achieve career goals) exerted positive motivational influence on the students' willingness, with Utility Value being more influential. Motivation based on Utility Value also had the strongest influence on career choice. These findings can guide policy and intervention design to ensure maximum impact and effectiveness in increasing and sustaining educated youths in agriculture.

Keywords:

Expectancy-Value Theory, Youth, Nigeria, Agriculture, self-employment

1. Introduction

One-fifth of Sub-Saharan African (SSA) population are youths within the age of 15-24 years (United Nations [UN] World Youth Report, 2018). Such a high youthful population, termed as 'youth bulge,' is generally welcomed, since it has the potential to provide the dynamic and energetic human resource required to achieve sustainable development (UN World Youth Report 2018; Africa Development Bank [AfDB] 2018; Mueller & Thurlow 2019). Despite this, Africa still accounts for a growing number of food insecure people (FAO, IFAD, UNICEF, WFP, & WHO, 2019). This failure can be attributed to multiple and interrelated factors – a key one being its aging agrarian population, compounded by a decline in the number of youths going into agriculture (Ji-Yeun & Nsanganira, 2019; Susilowati, 2014; Ariyo & Mortimore, 2012). However, this is not unique to SSA, but rather a global trend as many countries in other parts of the world – such as US, UK, Australia, India, and the Philippines – are also experiencing a consistent increase in aged farmers and a decline of young entrants into agriculture (Watts & Harrison, 2017; SRUC [Scotland's Rural College], 2016; Santiago & Roxas, 2015; Lantra, 2012; Jöhr, 2012; Kumar, Suchiradipita, & Saravanan, 2019). Despite this, our understanding of what may drive young educated people to choose agricultural employments is still very limited. In this paper we aim to contribute towards filling this knowledge gap.

It is recognised that 'sustainable' agricultural development go hand in hand with the Sustainable Development Goal Number-2 of the UN that of ending global hunger (FAO Food Security and Nutrition Forum [FSN Forum] 2018; Leavy & Hossain 2014). Sustainable agricultural development, in turn, maybe at risk of not been achieved without engaging educated young people as required for its development (Committee on World Food Security [CFS] 2015; Filmer & Louise 2014). As empirical works also find that, in general, educated young people can be more venturesome and risk-embracing compared to older people (Kumar, et al., 2019; Mueller & Thurlow, 2019). For example, the uptake of modern productivity-enhancing and resource-saving agricultural technologies and inputs has been found significantly higher among younger farmers (Calestous, 2015; Sheahan & Barret, 2017). Such innovations and higher productivity are vital for the sustainability of modern agriculture.

However, in the context of SSA, with its massive number of unemployed youth – referred to as a 'ticking time bomb' by some authors (Ighobor 2013; Coy 2011), agricultural development has been heralded as the panacea to youth unemployment, with several interventions being targeted at 'youths in agriculture' (Filmer & Louise, 2014; Addo, 2018). Some examples are the Ghana AgroCenta, in which youths learn from successful young farmers (Afere, et al., 2019). And the Youth Agripreneurs incubation centres of the International Institute of Tropical Agriculture (IITA), aimed at training unemployed graduates in agriculture, and adopted in Kenya, DR Congo, Nigeria, and Tanzania. (Lynch, 2019).

While, the forgoing perspectives indicate the importance of engaging youths for the development of the agriculture workforce and its future human capital development, a review of the literature indicates that the majority of young people, in general, have a negative perception of agriculture and are not interested in an agricultural career or occupation (Leavy & Hossain, 2014; CFS, 2015; Addo, 2018; Luke, Scott, & Reinette, 2019). The commonly-identified reasons for this include the perception that agriculture is for the old, poor, rural and uneducated or unskilled people; that it is an occupation of last resort, with too many risk and little financial reward; and that stigma and negative pressure from family and friends prevent young people from embracing an agricultural career (Watts & Harrison, 2017; Addo, 2018; Luke et al., 2019).

It is also recognised that the 'youth' consist of diverse subgroups, which are characterized by their differential access to education, geographic location, gender, and culture, which influence their aspiration and attitude (Addo 2018; Ji-Yeun & Nsanganira 2019; Glover & Sumberg 2020). Regarding access to education, research that have specifically investigated educated young people's interest in agricultural employments or occupations, although sparse, have yielded diverse and varying results. Studies of agriculture students in tertiary institution in USA identified the need to help family and society with their skills in agriculture as the student's previous experience in agriculture enables them to identify how best to help (Jones, Williams, & Gill, 2017). Other studies in the USA by Esters and Bowen (2005) and Scofield (1994) identified future career opportunities, influence of high school education and work experience, parent's support, job security, social status, and respect from people in other fields as positive influencing factors. This was partially corroborated by studies of Okiror and Otabong (2015) and Dlamini (2017) in Uganda and South Africa, respectively. The authors also identified anticipation of future career opportunities as an influencing factor on students' agri-career choice. Okiror and Otabong (2015) study also identified other factors, including scholarship opportunities, peer influence, social prestige of an agricultural career, and the influence of "support from well-placed relatives". However, a study (Ilenloh, Onemolease, & Erie, 2012) in Nigeria revealed that students' choice of an agricultural career was determined by their gender, with males being more interested in an agricultural career than female; current academic performance; and attitude to agriculture. Another study (Hudu, Hamza, & Afishata, 2014) on undergraduate agriculture and agric-business students in Ghana shows that their choice of self-employment in agriculture was based on their perception that agriculture had a high chance of success, was lucrative, and was an area in which it was easy to be self-employed.

However, empirical research in Nigeria and largely SSA on the motivation of young people in tertiary educational institutions to choose an agricultural career or occupation is rare. Where such studies exist, they are not grounded within the framework of any empirically validated theory. Accordingly, in this paper we aim to investigate the willingness of Nigerian university students to take up employment in the agriculture sector after graduation, and the factors that would motivate them to do so. For this, we use a framework by drawing on the Expectancy Value Theory of motivation. The structure of this paper is as follows: theoretical framework (section 2), research methods (section 3), results (section 4), and discussions and conclusions (section 5).

Theoretical Framework

Various theories have been used by past studies on youth motivations regarding career choices. These include the Self-Determination Theory (Anderson, 2013; Ariela & Yael, 2016), the Expectancy-Value theory (Richardson & Watt 2006; Watt & Richardson 2007; Benson & Morkos 2013) and the Need Hierarchy Theory (Taghibaygi, Maisam, & Sayed, 2015). In this research we used the Expectancy-Value Theory (EVT) theory as it seeks to explain young people's expectations of success when they choose a specific activity over another, their task or activity

valuation, and how these expectations and valuations affect their performance, participation and choice, be it academic or career (Eccles & Wigfield, 2002; Bøe & Henriksen, 2015). The EVT was developed by Eccles et al., in 1983 from empirical studies on students' choice of a STEM career and it has also been used as well on non-STEM career choice, such as teaching (Watt & Richardson, 2007; Richardson & Watt, 2006).

The EVT consists of two motivational components, namely Expectation for Success and Value. Expectation for Success is based on individuals' perceptions or self-efficacy about their competence in terms of task difficulty and self-beliefs about their ability regarding a given activity or task and the probability of succeeding at it. According to the EVT, such perceptions develop over time through an individual's interactions with his/her socio-cultural environment, observation of other people's behaviour and his/her interpretation of these (Wigfield & Cambria, 2010; Wigfield & Eccles, 2000).

The Value component is defined in relation to how the qualities of different tasks influence an individual's desire to do the tasks. The Value component is subjective in nature because an individual's belief about or acceptance of the same task may vary, as this is directly associated with the nature of the task, context and various attributes of the individual undertaking the task (Wigfield & Eccles, 1992; Wigfield & Cambria, 2010). The Value component has four dimensions, namely, intrinsic value (inherent joy in carrying out a task); utility value (usefulness of the task to an individual's current or future goals); attainment value (prominence placed on how well an individual thinks he/she could do the task); and costs (including opportunity and effort or emotional costs) (Wigfield & Eccles, 1992). The EVT postulates that value predicts intent and actual decision to continue with different activities, while success expectancy and beliefs are psychologically stronger predictors of student performance and choice (Wigfield & Cambria 2010).

Albeit limited, different dimensions of the EVT have been studied alone or collectively within the career/aspiration literature. In USA, Matusovich, Streveler, Loshbaugh, Miller, & Olds, (2008) explored Success Expectancy among undergraduate students' belief of expectation for success in a career in engineering. The study revealed that the students' Expectations for Success in their future career as engineers was high. This was based on their self-assessment which was developed over time through their experience in activity related tasks such as, internship they took part in, as well as their growing skill competence as they took more engineering classes. The study showed that all these led to an increase in their expectation of success in an engineering career and their desire to follow through after graduation (Matusovich, et al, 2008). Thus, this study affirms the premise within the EVT that an individual's expectation of success is a direct predictor of his/her career choice (Bøe & Henriksen, 2015; Eccles & Wigfield, 2002).

Other studies, such as by Richardson and Watt (2006) and Fan, Weihua, Consuelo, & Diana (2020), explored all the dimensions of EVT among teaching and engineering university students in Australia and USA respectively. Although the studies covered different disciplines and geographical contexts, both identified a strong influence of the Value component of EVT in predicting career choice. The study by Richardson and Watt (2006) revealed that the highest rated motivation for choosing teaching as a career was participants' beliefs regarding their own teaching abilities, and values, including the intrinsic value of teaching and its utility value in terms of the social and personal usefulness of teaching as a career. Social utility values included factors such as working with children, making a social contribution, and a desire to shape the future. Personal utility values included job security, time for family, and job transferability. The study by Fan, et al. (2020) which examined engineering students' motivation to pursue engineering (either as occupational path or further studies) beyond their college degree, revealed that only intrinsic and utility values were strongly correlated with students' plans to remain in engineering post-graduation. Watt (2005) revealed that 'utility value' (career interest in maths) was the strongest determinant for adolescents' interest in studying maths, while 'attainment value' (perception of own math abilities) was the next important determinant. The social aspect of the utility value was further confirmed in another study by Richardson and Watt (2006) on choice of a teaching career among pre-service teachers in Turkish universities. The study found 'social utility values' and the desire for job security as the primary drivers.

These studies highlight the strong influence of the 'Utility Value', indicating that the Value component of the EVT is a stronger predictor of students' willingness to continue in a field post-graduation Fan, et al. (2020).

Very few (if any) empirical studies can be found that have applied the EVT explicitly as a guiding framework in investigating tertiary students' motivations to choose agricultural careers. Several studies, however, report motivational factors that align closely with the main theoretical constructs within the EVT. For instance, studies in the USA (Esters & Bowen, 2005; Scofield, 1994), Uganda, (Okiror & Otabong, 2015), and South Africa (Dlamini, 2017) revealed that students' choice of agricultural careers was influenced by their expectations of success and usefulness of agricultural careers. These findings align closely with the concept of "utility value" within the EVT. However, the role of these motivational drivers, as discussed above, is yet to be verified in the context of SSA.

Moreover, no study was found that have explored how students' career choice differ according to their demographic characteristics.

2. Materials and Methods

Location and Sample

The sample for this study comprised full-time undergraduate students of agriculture from four Universities in South-western Nigeria (Table 1). These universities were purposively selected because of the first author's pre-existing contacts with some faculty members within those institutions, that aid the authors access the requisite data. Also, the proximity of the universities to each other saved the time and resources required for data collection, and thus made the study logistically feasible. As the duration (five years) and structure of undergraduate agriculture programmes were similar across all four universities, students were chosen through a multistage cluster sampling technique (Kumar 2014, Bryman 2016). An attempt was made to ensure representation of all types of agriculture undergraduate programmes within each university (Table 1). Within each cluster, data were collected from a convenience sample of students who agreed to voluntarily participate in the survey. To fulfil the study's aim (i.e. motivation to pursue an agricultural career after graduation), data was collected from the final (fifth) year and third-year students. Fourth-year students could not be included in the study as they were out on a mandatory internship.

The survey was conducted in mid-2018 with a structured self-administered questionnaire. This was administered in lecture halls or classrooms of the selected universities. The sample size consisted of a total of 1,021 students across all agriculture programmes from the four universities. The requisite sample size for each university was determined with the help of an online calculator with parameters set at 50% response distribution, 95% confidence level, and 5% margin of error. This was replicated at each university visited.

Table 1. Undergraduate Students Population and Sample Size of each university by program/courses

University	Programme	Population Total Sample Size Total					
		Yr. 3 ^a	Yr. 5		Yr. 3	Yr. 5	
*Federal	Agriculture Mgt. & Rural Development	250	289	539	30	39	69
University of	Animal Science & Livestock Production	401	439	840	53	57	110
Agriculture	Environmental Resources Management	158	190	348	20	24	44
Abeokuta	Food Science and Human Ecology	70	85	155	8	11	19
(FUNAAB)	Plant Science and Crop Production	344	378	722	46	47	93
Obafemi	Agriculture Economics	79	49	128	38	24	62
Awolowo	Extension and Rural Development	37	38	75	18	18	36
University Ile-Ife	Crop Production	31	34	65	15	16	31
	Animal Science	56	40	96	27	19	46
	Soil and Land Management	20	31	51	10	15	25
Federal	Animal Production and Health	92	63	155	29	20	49
University of	Agricultural & Resource Economics	78	45	123	24	14	38
Technology,	Crop, Soil & Pest Mgt.	87	45	132	27	14	41
Akure	Food Science & Technology	115	84	199	36	26	62
	Fisheries & Aquaculture	60	59	119	19	18	37
	Agricultural Extension & Comm. Tech.	88	39	127	27	12	39
University of	Agricultural Economics	55	67	122	24	29	53
Ibadan	Agronomy	37	43	80	16	19	35
	Animal Science	45	56	101	19	24	43
	Crop Protection and Environmental	40	16	56	17	7	24
	Biology						
	Aquaculture and Fishery Management	51	18	69	22	8	30
	Agricultural Extension and Rural	44	37	81	19	16	35
	Development						
Total				4383			1021

*FUNNAB operates a college system, therefore there are further departments under each college; a - third year students and fifth year students

Out of 1000, 967 students completed the questionnaires, which amounted to a response rate of 96.7%. The questionnaire data were screened and cleaned for any inconsistencies, such as missing data, incomplete responses to questions, etc. Following this, 921 (95%) out of the 967 returned questionnaires were finally retained for analysis.

Measure and Analysis

The sampled students were asked at first whether they would be willing to take up an agricultural career after graduation with options of four responses – “yes”, “no”, “maybe”, and “don’t know” (Figure 1). These responses were used as a filter (Bryman, 2016). Accordingly, only the students who answered “yes” and “maybe” (N=878) were then asked to complete the motivation scale. The scale had 11 items measured on a 5-point Likert scale – ranging from Strongly disagree (1), to Strongly agree (5). The scale had a Cronbach’s alpha score of 0.796, which according to Bryman (2016), is an acceptable level of internal reliability. Face and content validity of the instrument was confirmed by academic experts at the participant universities (Creswell & Creswell 2018; Kumar 2014). The statements in the scale were identified from a review of published studies on motivations regarding career choice, including teaching (Watt & Richardson 2007; Richardson & Watt 2006) and agriculture (Taghibaygi, et al., 2015). The inclusion of the statements was guided by the main constructs within the Expectancy-value theory (Section 2).

The data were analysed using descriptive statistics (frequency, percentage, mean and standard deviation) and Principle Axis Factoring (PA) with Oblimin rotation – a widely used technique of factor analysis (Leech, Barrett, & Morgan, 2011; Yong & Pearce, 2013). The IBM SPSS 24 statistical package was used for the analyses. Pairwise deletion was used to deal with missing data, rather than a listwise deletion, procedure (Pallant, 2016). The former resulted in a loss of $\pm 5\%$ of cases in the sample, compared to a loss of 15-20% which would have resulted from the latter option.

3. Results and Discussion

Willingness of the Students to Pursue an Agricultural Career

Table 2 contains the sample characteristics of the students who are willing to pursue an agriculture career. Over 80% of the students were within the 17-24 years age group. The sample had slightly more female than male students. Over 60% of the students did not initially apply to study agricultural programmes. The majority (62.4%) were resident in cities as opposed to semi-urban or rural areas, and a high proportion (70%) of them had no previous agricultural experience.

Table 2. Characteristics of study respondents (N=878*)

	N	frequency	Percent (%)
Age (Years)	812		
17-24		673	83
25-32		139	17
Gender	871		
Male		420	48
Female		450	52
Did you apply to Study Agriculture	874		
Yes		328	38
No		546	62
Program/Field of Study	874		
Crop Science		145	16
Animal Science/fishery		288	33
Soil Science		66	8
Agric. Economics/Extension/Farm/rural Mgt.		281	32
Agriculture related (FST)		94	11
Years of Study	783		
Third Year		406	52
Fifth Year		377	48
Home Location	871		
Rural (village/farming community)		40	5
Urban (Small Town)		291	33
City		540	62
Previous Agriculture/farming experience	857		
Yes		258	30
No		599	70

*Sample size consists of the students who choose ‘Yes’ or ‘Maybe’ in response to willingness to choose an agriculture career after graduation

The vast majority (73%) of the students were willing to pursue an agricultural career after graduation (Figure 1), whereas only 3.5% were either unwilling or did not know about it. Nearly 23% said that they might take up an agricultural career.

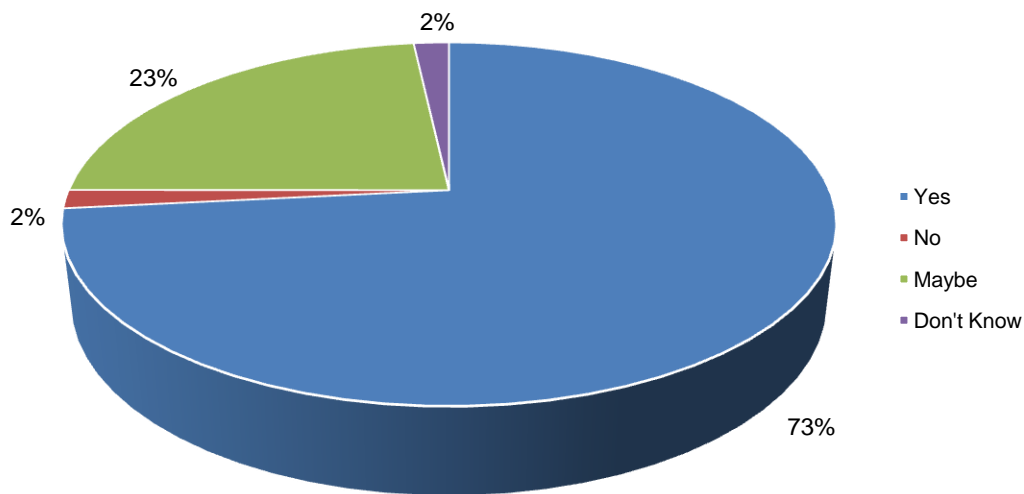


Figure 1. Students' willingness to take up an agricultural career after graduation (N=909)

Those students who did not indicate their willingness to pursue an agricultural career (Figure 1) were also asked to state the reasons for their choice. The results (Table 3) indicate that the top three reasons were: a lack of interest/passion about agriculture (34%); agriculture being inappropriate as a career and lack of encouragement for young ones within the sector (20.8%); and the manual, stressful, tedious, and time-consuming nature of agricultural jobs.

Table 3. Students' reasons for not being willing to choose an agricultural career (N=31 students)

Reasons for not choosing a career in the AGS	Percentage of students ^a
Not Interested in/passionate about agriculture	34.0
It is not a proper career and there is no encouragement for young ones within agriculture	20.8
Manual, stressful, tedious, time consuming, and not white collar	9.4
Unavailability of start-up capital	7.5
Discouragement from obsolete teaching methods; not innovative or suited to my talents/personality	7.5
Poor policy and low level of mechanization and development	5.7
Viewed socially as something anybody can do; not recognised by society	5.7
Unavailability of opportunity after graduation	5.7
Long term/poor financial returns and high risk of produce loss	3.8

a – multiple responses

Preferred Career Choice According to Selected Characteristics

Those who expressed their willingness to take up an agricultural career (Figure 2) were further asked to indicate the type of employments that they would prefer (in no hierarchical order from a list of options). As seen in Figure 2, self-employment under agricultural production was the most preferred career path with nearly 59% of student response. The least preferred careers were employment under agricultural production, and retail enterprise with over 17% and 8% responses, respectively.

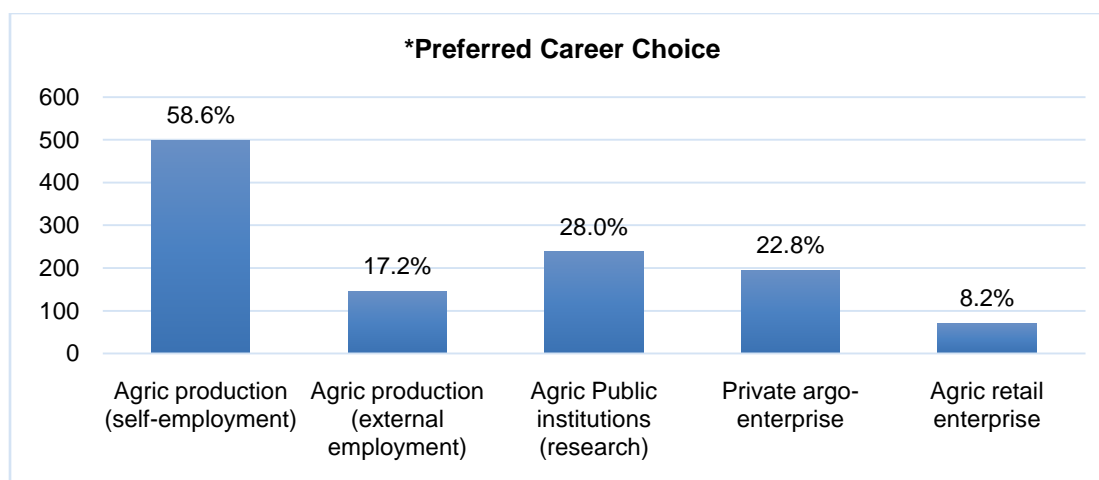


Figure 2. Student's preferred career choice (N=878); *Multiple responses

Disaggregated analyses (Table 4) according to students' selected characteristics and their choice of preferred agricultural career/job indicate that, with few exceptions, majority (>50%) of the students preferred self-employment under agricultural production. A higher proportion (68%) of them had previous experience. More males (65%) were interested in agricultural production-based self-employment than females (53%). A considerably lower proportion (<45%) of the students from the agricultural related/social sciences preferred self-employment under agricultural production, compared to 'core' agriculture students (livestock, soil and crop sciences).

Table 4. Students' preferred agricultural career and their selected characteristics

Student attributes (N)	Agric production (self-employment)	Agric production (external employment)	Public institutions (e.g. research)	Private argo-enterprise	Agric retail enterprise
Gender					
Male (405)	262 ^a (65%) ^b	77 (19%)	102 (25%)	78 (19%)	31 (8%)
Female (438)	230 (53%)	68 (16%)	135 (31%)	116 (27%)	38 (9%)
Location/residence					
Rural (village/farming community) (37)	26 (70%)	3 (8%)	10 (27%)	9 (24%)	3 (8%)
Urban (small town) (284)	164 (58%)	40 (14%)	80 (29%)	69 (24%)	27 (10%)
City (523)	304 (58%)	103 (20%)	143 (27%)	115 (22%)	39 (8%)
Had previous agricultural experience)					
Yes (253)	173 (68%)	38 (15%)	70 (28%)	60 (24%)	27 (11%)
No (579)	316 (55%)	105 (18%)	160 (28%)	131 (23%)	42 (7%)
Did you apply to study agriculture programme					
Yes (316)	193 (61%)	58 (18%)	79 (25%)	80 (25%)	29 (9%)
No (531)	302 (60%)	88 (17%)	159 (30%)	114 (22%)	41 (8%)
Agricultural programmes under study					
Crop science (142)	90 (63%)	23 (16%)	38 (27%)	32 (23%)	14 (10%)
Animal science/Fisheries (283)	207 (73%)	38 (13%)	62 (22%)	38 (13%)	16 (6%)
Soil science (63)	42 (67%)	24 (38%)	15 (29%)	16 (25%)	7 (11%)
Agric economics/extension/mgt.-related (272)	123 (45%)	52 (19%)	100 (37%)	68 (25%)	26 (10%)
Agricultural – other related (food sci) (87)	34 (39%)	9 (10%)	22 (25%)	40 (46%)	7 (8%)

Note: Multiple responses – afrequency count are based on number of responses; bpercentages are based on respondents in each cell

Motivational Drivers for Pursuing an Agricultural Career

The Motivational scale (detail in section 3.2) response were analysed using Principle Axis (PA) factoring with Oblimin rotation, no specific number of factors was requested in the analysis. The data had adequate factorability which can be seen in the inter-item correlation matrix (Table 5) having enough coefficient values of $>.3$ (Yong & Pearce, 2013). The suitability of the data for factor analysis was further confirmed by the Kaiser-Meyer-Olkin (KMO) value of 0.847 as this was higher than the recommended measure of 0.7 (Pallant, 2016; Leech et al., 2011).

An initial factor analysis with the 11 items produced unacceptably low ($<.2$) loading for one item (“there are presently lots of career opportunities for me in the agriculture sector”). This item was dropped from further analysis as the loading was not statistically meaningful (Yong & Pearce, 2013). The remaining 10 items were used in the final analysis.

The factor analysis produced two factors with eigenvalues greater than one, which is a common criterion for considering a factor to be meaningful (Leech et al., 2011; Yong & Pearce, 2013). The factors explained 34.3% and 11.8% of the variance, with both explaining a cumulative total of 46.1%. The item-wise factor loadings under each factor are indicated in bold in Table 5.

Table 5. Correlations among the items in the motivation to take up an agricultural career scale (N=877)

		Correlation Matrix									
“After graduating I will take up a career/job within the agriculture sector because...”		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
B1	I can start and build a career for myself within my field in Nigeria.		0.295	0.298	0.217	0.225	0.278	0.264	0.230	0.320	0.162
B2	there are more opportunities to be self-employed in the agri-sector than in others0.			0.175	0.148	0.300	0.124	0.175	0.076	0.169	0.072
B3	there are demands/opportunities for agri-graduates in Nigeria0.				0.352	0.274	0.312	0.339	0.262	0.218	0.359
B4	compared to non-agric sectors, financial gain/salary is better in the agric sector0.					0.331	0.414	0.314	0.285	0.226	0.339
B5	I can have a more successful and steadier career path for myself compared to non-agric sectors0.						0.305	0.346	0.184	0.278	0.162
B6	a job here will earn me more respect among my peers than that in non-agric sectors0.							0.359	0.296	0.267	0.340
B7	there is more job security in this sector in Nigeria when compared to other sectors0.								0.344	0.278	0.307
B8	I will get more opportunities for scholarships/grants/funds for either further studies or starting an agribusiness compared to other sectors0.									0.332	0.408
B9	I can contribute more to the growth of my country compared to other sectors0.										0.169
B10	there are lots of support for agri-graduates in Nigeria to succeed in their agricultural careers.										

Table 6. Factor analysis of the items in the motivation to take up an agricultural career scale (N=877)

Item/Variables	Pattern Matrix ^a		Communalities
	Factor		
	1	2	
B1	.155	.440	.289
B2	-.096	.558	.271
B3	.458	.176	.314
B4	.504	.130	.338
B5	.176	.475	.334
B6	.517	.141	.334
B7	.454	.222	.352
B8	.593	-.024	.335
B9	.259	.310	.240
B10	.739	-.205	.443
Percentage of Variance Explained	34.3%	11.8%	

Extraction Method: Principal Axis Factoring
 Rotation Method: Oblimin with Kaiser Normalization
 Note: Major loadings for each item are bolded

After careful evaluation, the two factors were identified and labelled as “Success Expectancy” (factor 1) with six items and “Utility Value” (factor 2) with four items (Table 6). Factor 1 had more items and higher loadings, with item B10 (“there are lots of support for agri-graduates in Nigeria to succeed in their agricultural careers”) having the highest loading of 0.747.

Table 7 shows the mean scores (ratings) of the individual motivation items and (bold) for each of the two EVT factors. Factor 2 (Utility Value) had a higher mean score of 4.21 than Factor 1 (Expectancy Value) with a mean score of 3.50. Implying that, on an average, the students agreed more with the statements within Factor 2 compared to those within Factor 1. Regarding the individual items, three items were rated above 4, which indicated ‘agreement’ on the five-point Likert-type motivation scale. These items, under Factor 2 (Utility Value), were related to higher opportunities in the agriculture sector to start and build a career (mean 4.47), contribute to the growth of the country (mean 4.22), and to get self-employed (mean 4.17).

Table 7. Item-wise factor loadings, mean scores of individual items, and mean scores of the two motivational factors identified in this study (N=877)

Motivation items/variables	Factor loadings	Mean Score	Standard deviation
“After graduating I will take up a career/job within the Ag. Sector because...”			
	Expectancy (Factor 1)		
B3	.457	3.50	.75873
B4	.512	3.83	1.037
B6	.526	3.24	1.221
B7	.454	3.37	1.122
B8	.593	3.77	1.051
	Utility Value (Factor 2)		
B8	.593	3.65	.596

sectors.				
B10	there are lots of support for agri-graduates in Nigeria to succeed in their agricultural careers.	.747	3.16	1.262
	Utility Value (Factor 2)		4.21	.55943
B1	I Can Start and Build career for myself within my field in Nigeria	.450	4.47	.629
B2	there are more opportunities to be self-employed in the agri-sector than in others.	.557	4.17	.945
B5	I can have a more successful and steadier career path for myself compared to non-agric. sectors.	.471	3.96	.923
B9	I can contribute more to the growth of my country compared to other sectors.	.317	4.22	.835

4. Conclusion and Recommendations

Given a worldwide decline of human capital in the agriculture sector (AGS) and the importance of attracting educated young people into the sector, this study explored the willingness and motivation of Nigerian university students to choose an agricultural career after graduation. The Expectancy-Value Theory (EVT) was used as a framework to guide this investigation.

Like an earlier study (Ilenloh et al., 2012), the vast majority (>90%) of the sampled students were found willing, or potentially willing, to pursue a career in agriculture. This somewhat contradicts the conventional view amongst international development institutions and practitioners that the youth in SSA are not interested in agricultural careers (FAO/CTA/IFAD, 2014; Mueller & Thurlow, 2019). This contrast can be linked to what Addo (2018) highlights as the lack of context-specificity in 'youth' studies, leading to the 'youth' being labelled as a homogenous construct.

This study identifies several reasons why a small proportion (~3.5%) of the students were unwilling to pursue an agriculture career. The two most important reasons – a lack of interest in (passion for) agriculture, and the perception that agriculture was not a proper career with no encouragement for young ones within the sector – correspond with the existing literature (Ilenloh et al., 2012; Leavy & Hossain 2014; Luke et al., 2019). This study, however, identifies some other important barriers not widely reported. This include the discouragement created by outdated teaching methods in the universities, and the social attitude of agriculture being an easy job which anyone could do (see Table 3). Similar to the second reason, Ilenloh et al., (2012) found that a reason why students in Nigeria (Edo State) were not interested in an agricultural career was a perception that 'agriculture was not a job for university graduates'.

In regards to 'outdated/obsoleat teaching methods', it is observed for instance that in African universities, the practical hands-on training usually involves the use of 'crude' traditional implements, such as hoes and cutlass, which the African Union (AU) launched a campaign against in 2015 'to confine the hand hoe to the museum' (FAO-AU, 2018). The students in our study also mentioned lack of mechanisation, and capital as reasons for their unwillingness. These findings resonate with the proposition for major reforms within African universities in order to enhance their capacity to strengthen the technical competence of African farmers (Calestous, 2015). Our findings also support the argument (Sumberg, Yeboah, Flynn, & Nana, 2017) that African agriculture needs to be modernised in order to make the sector attractive to the youth. This finding, however, seems to be at odds with an alternative view on African agricultural development through the promotion of low-tech, agroecological, and indigenous farming methods (Kenton, 2007). While, the high-tech, mechanised, and capital-intensive agriculture during the Green Revolution in Asia has been controversial (Vandana, 2007), a small proportion of the students in our study seemed to hold a different view.

An important dimension of this study is its focus on student 'willingness,' rather than only on 'unwillingness', which has been the predominant focus in the literature. In addition, this study also attempted to identify which agricultural careers might be of interest to Nigerian youth (Figure 2). In doing so, this study has refrained from considering 'agricultural career' as a unitary construct – the predominant tendency in the literature (Sumberg, Nana, Leavy, Dolf, & Wellard, 2012; Adebo & Sekumade, 2013). This focus has generated some interesting insights. For example, we found that 'self-employment' under 'agricultural production' (i.e. farming) was the most preferred career irrespective of selected characteristics, such as gender, location (rural-urban), previous agriculture experience, and choice of study . This finding contradicts the popular narrative (Löwe & Phiona, 2017; FAO/CTA/IFAD, 2014; Susilowati, 2014; Tadele & Gella, 2012) about educated young people not being interested in agricultural production

or farming. This difference can possibly be linked to the increase in the 'youths in agriculture' programmes being pushed by government and the development agencies in Nigeria and increasingly across the continent (Afero et al., 2019; Lynch, 2019)

Crosstabulation of students' willing to take up various agricultural careers and their selected characteristics (Table 4) provides some important insights. Although majority of the students did not apply to study agriculture, this attribute did not seem to affect their preference for self-employment under agricultural production. However, we found considerable variations in terms of other attributes. For example, more males (65%) preferred self-employment under agricultural production than females (53%), whereas more females preferred non-production related careers (see Table 4). Of those who preferred production-based self-employments, a considerably higher proportion (70%) were from rural areas, compared to 58% from urban areas. Whereas, only 8% from rural areas preferred agri-production related external employments, while 14-20% from urban areas preferred it. This means that there is a need to move out of the current predominant trend of 'rural youth' (Battersby, 2012; Crush, 2012; Addo, 2018), and extend the focus to 'urban youth' as well. This is particularly important since there are increasing evidence that Africa is rapidly urbanising, with food insecurity increasingly being found in urban areas (e.g. slums in cities) (United Nations Department of Economic and Social Affairs [UN-DESA], 2016; WHO, 2018).

Disaggregated analyses also revealed that a higher proportion (>50%) of students from more practical or 'production'-oriented programs, preferred self-employment under agricultural production, with the highest proportion (73%) coming from the animal science or fisheries (including aquaculture) disciplines. This can be linked to the study by Jones et al. (2017), in which the study participants stated that livestock production is seen as a more profitable agribusiness enterprise with promising occupation when compared to crop. In contrast, a considerably lower proportion (<45%) of the students from agricultural social sciences (e.g. extension/economics/management) preferred self-employment under agricultural production. They constituted the highest proportion (37%) of those interested in jobs in public institutions. This may be because social sciences are not directly related to production enterprises and therefore, they may have been less exposed to practical or on-hands training on agricultural production during their studies.

One of this study's key contributions to the literature is an identification of the drivers of students' willingness to take up an agricultural career (Tables 6 and 7). In this regard, this study validates the two main constructs of the Expectancy-Value Theory (EVT) namely, Expectancy and Value (specifically Utility Value). Both were found to exert positive motivational influences on the sampled students. Our findings support some of the factors identified by other studies (e.g. Hudu et al., 2014; Okiror & Otabong, 2015; Dlamini, 2017). These include self-employment or entrepreneurship, and future career opportunities after graduation. However, unlike those studies, the novelty of this study lies in the use of a valid and reliable theoretical framework. In this regard, our study indicates that the EVT can be used as a useful theoretical lens to understand the motivations of educated young people in SSA in terms of their choice of agricultural careers.

A consideration of the individual items within the motivation scale provides important lessons. For instance, within the Expectancy sub-scale, abundance of support for agricultural graduates to succeed in Nigeria had the strongest influence in terms of the highest factor loading (Table 7). Similarly, within the Utility Values sub-scale, the item relating to 'more opportunities for self-employment within agriculture than other sectors' had the highest factor loading (Table 7). An identification of such high-impact items provides important guidelines for interventions to motivate young people to take up agricultural careers as well as training and education of future workforce/human capital for the agriculture sector.

Alongside confirming the importance of both Expectancies and Values in explaining students' career choice motivations, we show that one of these drivers can be more important than the other. Although the items within both factors had similar factor loadings (mostly within 0.45 to 0.60), the students assigned higher scores to the Utility Value items, compared to the Expectancy items (Table 7). This implied that the students were more in agreements with the Utility Value statements as being their motivational drivers. Although such specificities are not found in the youth and agriculture literature, this is supported in the wider educational literature. For example, according to Fan et al (2020), and Richardson and Watt (2006), motivation based on utility value has the strongest influence on choice, since it reflects an individual's desire to do or to continue with a task. The implication of such an identification is that this is a key factor that should be 'prioritise' in relevant policies and interventions aimed developing agriculture human capital.

Although this study generates useful and interesting perspectives, it has certain limitations. One such limitation is its focus on Utility Values only. Other subjective values, as espoused within the EVT, such as intrinsic and attainment values, could not be studied due to data limitations. Moreover, data collection was limited to agricultural students in four universities in the South-West region of Nigeria only. Due to time constraints, a truly random sample of the respondents could not be drawn. It was possible to collect data only from those students who were

voluntarily willing to spare their time to fill in the questionnaire and were conveniently accessible. Also, institutional differences in overall structure of the agriculture programmes could not be controlled for, which may have affected students' responses. Further studies considering all these limitations are needed for the findings to be more generalizable.

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