

Perception of Undergraduates About Agricultural Extension Education and Agricultural Development Linkage in Nigeria

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Abstract

This paper examines the perception of undergraduates toward Agricultural Extension Education (AEE) and Agricultural Development linkage in Nigeria. 188 agricultural students in College of Agriculture, Olabisi Onabanjo University, Aiyetoro, Ogun State and School of Agriculture, Lagos State Polytechnic, Ikorodu were used for the study using percentage, mean score, standard deviation and t-test to analysis data obtained through a questionnaire that was validated by Agricultural extension experts. Result from the study showed that 62.8% of students were male and community was most influencing factor considered in choosing agriculture. 38.3% of respondents perceive AEE as means of developing agriculture. Result also shows that training in agricultural extension (M=2.83) would increase farm output and national income. At 95% confidence interval ($p < 0.005$), there is significance relationships in the students' perception towards AEE as they agreed that training in extension leads to transformation in agriculture. It is recommended that, there is need for pragmatic youth development and educational programmes of extension for food security and development of agriculture in Nigeria.

Keywords: Perception, undergraduate, Agricultural Extension Education, Agricultural Development, Linkage

Introduction

One of the major problems facing developing countries today is the production of sufficient food and fibre, for their large population (Ayanwale and Laagye, 2007). Agriculture therefore, provides the means of increasing food and fibre production. Koyenikan (2008) exposed that agriculture is important to the Nigerian economy as it engages about 70% of the labor force and contributes over 40% of the Gross Domestic product (GDP). It provides food for the teeming population and raw materials for industries. The sector is faced with diverse problems which militate against optimizing its potential. Some of the constraints include low productivity, poor marketing and distribution, infrastructures, and inadequate access to credit, weak extension services and inadequate database among others. An attempt to ameliorate the constraints by the Federal Government was the adoption of the Agricultural Policy for Nigeria in 1988 (Koyenikan, 2008).

To achieve significant agricultural productivity in the country, there is need to involve young citizens in agricultural education. Unfortunately, today many students look down on agriculture, even despising it, resulting in non-challant attitude to agriculture (Ayanwale and Laagye, 2007). Though, schools, colleges and universities of agriculture were established in the country to address

the problem of agricultural growth. These schools were mandated with coordinated and mission oriented research; rural development targeted extension services; direct production activities; and more importantly, provide comprehensive and harmonized training of students, who will engage in farming upon graduation (Ladebo, 2004). Student upon graduation would bring a change into agriculture of the nation; a changing agriculture requires public and private institutions that are resilient and adaptable to new opportunities to come to terms with the reality. That means we must go beyond the drawing board and face the reality to bring food to the ordinary people (Bokor, 2005).

Agricultural extension education (AEE) by undergraduates would bring desirable change through education and communication in farmers' attitude, knowledge and skills. The role of agricultural extension has revealed by literatures involve dissemination of information, building capacity of farmers through the use of a variety of communication methods and help farmers make informed decisions. Sinkaye, (2005) has cited by Koyenikan (2008) equates help in extension to empowering all members of the farm households to ensure holistic development. Bokor (2005) raised a question on what does agricultural extension mean if it is to bring about a desirable change and tangible results into food production and improved national economy? He gave an opinion which showed a link between AEE and Agricultural Development (AD); "Agricultural extension is an applied behavioral science, which is applied to bring about desirable changes in the behavioral complex of farming community, usually through various strategies and programmes of change, by applying latest scientific and technological innovation". This link is also evidence as undergraduates in schools and colleges of agriculture are exposed to a compulsory farm practical year programme. Oloruntoba (2008) revealed that the roles of Faculties/Colleges of Agriculture in producing agricultural graduates for academic and professional leadership and management are critical to national social progress and economic growth.

Undergraduates of Olabisi Onabanjo University (OOU) undergo a farm practical year (FPY) programme during their fourth year on campus while those at Lagos State Polytechnic (LASPOTECH) participated in four month compulsory Student Industrial Work Experience Scheme (SIWES) after their first year of National Diploma (ND) and one year Industrial Training (IT) after second year of ND programme before they are admitted for their Higher National Diploma. The FPY is supervised by SIWES as a prerequisite for degree and Higher National Diploma (HND) certificate respectively. Oloruntoba (2008) also assumed that the provision of farm practical would make undergraduate agricultural students favorably disposed to it, hence, the connection between AEE and AD in Nigeria. Since no meaningful agricultural productivity could be achieved without a pragmatic extension education by agricultural students. It is against the backdrop that the study sought to provide answers to the following research questions: What are the factors undergraduates considered in selecting agricultural extension/agricultural related courses? How agricultural student perceive AEE? And how does AEE contribute to AD in Nigeria?

The purpose of the study was to examine the perceptions of undergraduates toward AEE and AD nexus in Nigeria. The specific objectives were to:

- Identify factors considered by undergraduates in selecting agricultural extension/agricultural related course;
- Measure perception of agricultural students towards AEE and
- Ascertain the contribution of AEE to AD in Nigeria.

The research hypotheses were:

H1: There are significant relationships in the students' perceptions towards AEE.

H2: There are significance relationships among students in terms of contribution of AEE towards AD in Nigeria.

Methods and Procedures

The population for this study included all undergraduate agricultural students enrolled in School of Agriculture, Lagos State Polytechnic, Ikorodu and College of Agriculture, Olabisi Onabanjo University, Aiyetoro-Ogun State. Stratified random sampling technique was used to select the respondents for the study. A total of 100 undergraduates were selected from second (200L) to fifth (500L) year at OOU and 140 students from National Diploma (ND) studying Agricultural Technology (AGT) and Higher National Diploma (HND) studying Agricultural Extension and Management (AEM) and other agriculture programmes at LASPOTECH. Out of 325 students in 200L to 500L at College of Agriculture, Aiyetoro, 42 are studying Agricultural Extension and Rural Sociology (AXR), 32 students of AXR provided usable data for this study. While, 48 students studying agricultural related courses at OOU also provided usable data for the study. As well, 50 students in ND studying AGT and all the 29 students in AEM department and other 29 HND students of School of Agriculture, LASPOTECH provided responses for the study. Thus, out of the total 240 students population selected for this surveyed, 188 students (sample size) filled the measuring scale and returned appropriately.

A four-part structured questionnaire was designed based on review of literatures and researchers experience to obtain pertinent information from the respondents. The instrument was tested for content and face validity by Agricultural Extension experts, few corrections were raised and were corrected based on recommendations. A pilot test was conducted with 80 agricultural students at School of Agriculture, Lagos State Polytechnic, Ikorodu in 2011. Thus, responses were used to improve the content validity of the measuring instrument. Reliability estimate of the instrument was calculated using Cronbach's Coefficient ($\alpha=0.89$). Part one extract personal data (attributes) which include sex, age, educational qualification in view, preferred course of study and present course of study. Part two to four of the scale were used to test research objectives and hypotheses stated above. In parts two of the questionnaire, an attribute with five levels/scales or values (Vincent, Olaegbe & Sobona, 2006) was used to determine what influence respondents' decision in studying agriculture and eleven attributes with five-point Likert type scale of very weak, weak, medium, much and very much with nominal values 1, 2, 3, 4 and 5 respectively was used to obtain quantitative measure of the factor (s) considered by undergraduates in selecting agricultural extension/agricultural related course.

Part three measure the perception of undergraduates to AEE using six attributes. The attributes sought to find out the background knowledge, first experience of respondents in AEE, interest in farming operation and teaching rural farmers. While part four ascertain the contribution of AEE to AD in Nigeria using ten variables/attributes. This attributes was measure with five point Likert type scale of strongly disagree (1), disagree (2), indifferent (3), agree (4) and strongly agree (5). Data gathered from the survey were analyzed with descriptive statistical tools; mean score, standard deviation, percentage and inferential statistics using parametric tool (t-test) to determine the differences between the perception of agricultural extension students and other agricultural students surveyed towards AEE and its contribution to agricultural development in Nigeria.

Results

The results show that 62.8% agricultural undergraduates surveyed are male and 37.2% are female and that majority of respondents (81.9%) are within 20 – 30 years of age also, majority (76.6%) preferred studying agriculture as a course. While, about 42.6%, 29.8%, 13.8%, 7.4% and 6.4% of the respondents are presently studying agricultural extension, agricultural technology, agricultural economics, crop/horticulture production and animal/fishery production respectively. The gender distribution of the study is in consonance with the report of Oloruntola (2008) who reported that most of the agricultural students surveyed at University of Agriculture, Abeokuta are male (60%). However this report is contrary to the work of Movahedi & Chizari (2007) who reported that 74% of agricultural students of Bu Ali Sina University (BASU), Iran were female and 26% were male. It therefore shows that most of the students studying agriculture in higher school in Nigeria are male and that of Iran are female. Average age of undergraduates of agriculture in Nigeria is in the range of 20-30 years as revealed in the study and studies of Oloruntola (2008) and Ayanwale and Laagye (2007) who reported age range of 21-25 years and 21-32 years respectively for agricultural students.

The influencing conditions that guide decision of respondents in choosing agriculture/agricultural extension as a field of study are community (33%), parents/relative (20.2%), secondary school teachers (14.9%), mass media (11%) and internet/social network (7%). Results presented in Table 1 shows that majority of undergraduates (81.9% & M=4.22) considered agriculture as a course because of much important, interest and willingness towards agriculture. This is in agreement with community as a major condition that influence respondents decision to choose agriculture and the report of Movahedi & Chizari (2007) that ranking factors for undergraduate importance towards agriculture and interest/willingness toward Agriculture at BASU were (M=3.20 & 2.83 out of 5). Also, the study of Ayanwale and Laagye (2007) revealed that majority of respondents agreed that life is meaningless without agriculture and this imply great importance, interest and willingness of undergraduate in selecting agriculture as a course of study to provide food for the community. Furthermore, means of acquiring more income after graduation (M=4.20), interests in giving new ideas to farmers (M=4.16) and eligibility for continuing on graduate courses (M=4.05) are some of the strong factors considered by respondents in choosing agriculture. Secondary school and television programs about agriculture (M=3.37), interest toward working with rural farmers (M=3.26), public sector supporting for agricultural graduates (M=3.15) and limitation for admission in other study fields (M=2.88) are some of the attributes listed to determining factors considered in choosing agriculture, undergraduates therefore were averagely disposed to these factors. However, about 35.6% of respondents considered advise from secondary teachers as a factor while, 34.4% and 26.9% were much disposed to order from father and mother respectively in selecting agriculture. Analysis of all the eleven factors/attributes listed shows standard deviation of mean ranged from 0.90 to 1.28 and mean difference ranged from 2.88 to 4.22 with an average mean of 3.55, thus, attributes 1 to 4 in Table 1 are the factors that undergraduates considered much in choosing agriculture. As well, respondents shows much interest in giving ideas to farmers (extension service) and interest towards agriculture (agricultural productivity), thus, if these factors are incorporated as a motivating factors into the course curriculum of students, it will aid positive development in agriculture.

Table 1: Factors undergraduates considered in choosing agriculture

S/n	Variable	Much ¹ Cumulative (%)	Medium ² (%)	Mean ³	SD ⁴
1	Importance, interest and willingness towards	81.9	12.8	4.22 _a	0.94

	agriculture				
2	Means of acquiring more income after graduation	83.9	9.6	4.20 _b	0.97
3	Interests in giving new ideas to farmers	80.9	12.8	4.16 _c	0.90
4	Eligibility for continuing on graduate courses	73.4	21.3	4.05 _d	0.94
5	Secondary school and TV programs about agriculture	52.2	18.1	3.37 _e	1.28
6	Interest toward working on rural areas	39.3	35.5	3.26 _f	1.20
7	Public sector supporting for agricultural graduates	39.8	26.6	3.15 _g	1.26
8	Order from teacher and advisors in secondary school	35.6	25.5	2.94 _h	1.28
9	Limitation for admission in other study fields	24.4	40.4	2.88 _i	1.13
10	Order from father and male relatives	34.4	26.6	2.84 _j	1.19
11	Order from mother and female relatives	26.9	30.9	2.80 _k	1.18

Superscripts ¹ & ²; response level of respondents, ³ & ⁴ mean score and standard deviation of respondents' responses and subscripts a - k; ranking factors of undergraduates' choice of agriculture

Result gathered shows that about 80.9%, M=1.19 respondents affirmed that they have background knowledge of AEE whereas 45.7% and 52.1% had their first experience in AEE during their secondary school education and after secondary school respectively. However, 2.1%, 4.3%, 23.4%, 28.7% and 38.3% perceive AEE as a means of liberating the mind, means to secure job, means of improving rural farm family, means to improve in skill and knowledge and means of developing agriculture respectively. Respondents highly perceived AEE as means of developing agriculture (38.3%) and this response is related to the study of Obuh (2007) that reported that respondents have favorable perception about the importance of Agricultural Extension in agricultural development. Undergraduates' agreement that training in AE would increase farm output and national income (2.83%) further confirms agricultural students' perception towards AEE, this is in consonant with the report of Ayanwale and Laagye (2007) that majority of the respondents (99%) disagreed with the idea that the money spent on agricultural training is a waste. As well, high interest in farming operation (78.7%) and teaching rural farmers (70.2%) further affirmed perception of undergraduate about AEE as means of developing agriculture. The corresponding t-test values computed for the six parameters used in measuring perception of students toward AEE as shown in Table 2 were statistically significant with 95% confidence interval ($p < 0.005$) which leads to acceptance of H1 since there are significant relationships in the students' perceptions towards AEE.

Table 2: Statistical relationship among variables of undergraduates' perception towards AEE

S/n	Variable	t-value	DF ⁵	Sig. (2-tailed)	(%)	SD ⁶	MD ⁷	95% confidence interval of the difference	
								Lower	Upper
1	Background knowledge of AEE	41.409	187	0.000	80.9	0.40	1.19	1.13	1.25
2	First experience in AEE	34.909	187	0.000	52.1	0.61	1.57	1.48	1.66
3	Perception about AEE	28.013	181	0.000	38.3	1.28	2.66	2.47	2.85
4	Training in AE by undergraduates would increase output of farming & national	89.318	185	0.000	84.0	0.43	2.83	2.77	2.89

	income.								
5	Interest in farming operations	30.000	187	0.000	78.7	0.86	1.87	1.75	2.00
6	Interest in teaching rural farmers	28.255	187	0.000	70.2	0.98	2.02	1.88	2.16

⁵Degree of freedom, ⁶Standard deviation and ⁷Mean difference

In Table 3, greater number of respondents agreed that AE brings change through education and communication in farmers attitude, knowledge and skills (95.8%, M=4.57). This is in agreement with Ibrahim, Muhammad, Yahaya and Luka (2008) who reviewed that Agricultural Extension has often been conceptualized as an education process, which promotes learning. It uses the combined findings of biological sciences and the principles of social science to bring about changes in knowledge, skills, attitude and practices in and out of school setting. Also, this result is in line with review of Ozor and Nnaji (2011) that agricultural extension is a series of embedded communicative interventions that are meant, among other things, to develop and/or induce innovations which supposedly help to resolve problematic situations.

Majority of respondents also, agreed that role of AE involves dissemination of information, building capacity and help farmers make informed decision (M=4.60). This was further ascertained by observation of Ozor and Nnaji (2011) that agricultural extension is involved in public information and education programmes that could assist farmers in mitigating the effects of climate change.

Contribution of AEE towards AD in Nigeria was also ascertained by respondents as they agreed that AEE is a means towards desired transformation in agriculture (M=3.92). This is in agreement with report of Bokor (2004) that the fundamental objective of agricultural extension is the development of the farming community and the overall development of rural economy in general. Transformation is therefore void if research findings are not undertaken by Agricultural extension experts who link farmers with new technology of farming practices. However, about (88.3%, M=4.30) of respondents agreed that research findings will be meaningless unless accepted by farmers and the strategic means of farmers having desired technological packages and programmes is through extension services. Thus, there is need for healthy coordination between extension departments and research institution as majority of respondents (92.6%, M=4.47) agreed to this statement. This result is confirmed by the assessment of Harder, Mashburn and Benge (2009) who reported that, the lack of research directed toward extension education curriculum may be because the need for such a program is misunderstood. Also, 86.2%, M=4.22 of the respondents agreed that extension system needs to develop a coordinated, internet-based information system where clients will have round-the-clock access to trustworthy, balanced views of specialized information and education. And respondents agreed (85.1%, M=4.22) that through this, extension system will continue to ensure national and international leadership in agricultural productivity.

The result from this study further ascertained the contribution of AEE towards AD as respondents agreed (89.4%, M=4.30) that development in the sector required articulated and comprehensive Agricultural Extension Policy (AEP). The study of Koyenikan (2008) is in agreement with this result as reported that, the goal of the proposed AEP could be to achieve a well organized extension system for efficient and effective extension delivery in all aspects of sustainable agriculture and rural development towards the attainment of food security, poverty reduction, rural empowerment and environment management. Also, respondents further agreed that there is need to have a more consistent, pragmatic, practical youth development and educational programmes of

extension for food security (85.1% M=4.23). As well as, community driven development of extension service that will allow participation of farm members in formulating sustainable extension programmes (95.0%, M=4.30).

The result in Table 3 also shows, measure of the distance⁶ between each score and the mean that ranged from 0.56 to 0.88 and mean difference⁷ ranged from 3.92 to 4.60, with an average mean of 4.26. Thus, students agreed to the variables used in measuring the contribution of AEE towards AD in Nigeria. At 95% confidence interval of the difference in means as shown in the table below, results of significance (2 tailed) equal $0.000 < 0.005$ using t-test to compare, which leads to acceptance of H2 since there are significance relationship among students in terms of contribution of AEE towards AD in Nigeria.

Table 3: Statistical relationship among variables of contribution of AEE towards AD in Nigeria

S/n	Variable	t-value	DF ⁵	Sig. (2-tailed)	%	SD ⁶	MD ⁷	95% confidence interval of the difference	
								Lower	Upper
1	AE brings change through education and communication in farmers attitude, knowledge and skills	63.774	186	0.000	95.8	0.70	4.57	4.43	4.72
2	Role of AE involves dissemination of information, building capacity and help farmers make informed decision	64.314	186	0.000	95.7	0.69	4.60 _H	4.45	4.74
3	AEE is a means towards desired transformation in agriculture	41.514	184	0.000	79.8	0.91	3.92 _L	3.74	4.11
4	Research findings will be meaningless unless accepted by farmers	47.470	186	0.000	88.3	0.88 _H	4.30	4.12	4.48
5	There is need for healthy coordination between extension departments and research institution	58.268	186	0.000	92.6	0.74	4.47	4.32	4.62
6	Extension system need to develop a coordinated internet-based information system where clients will have access to trustworthy and information	54.599	186	0.000	86.2	0.75	4.22	4.32	4.62
7	With the above extension system will continue to ensure national leadership in agricultural productivity	50.822	182	0.000	85.1	0.80	4.22	4.05	4.38
8	Articulated and comprehensive agriculture extension policy is required for development of the sector	55.991	182	0.000	89.4	0.74	4.30	4.15	4.46
9	There is need for consistent and practical youth development in extension for	50.208	180	0.000	85.1	0.80	4.23	4.06	4.40

	food security								
10	Community driven development of extension service that will allow participation of farm members in formulating extension programmes which is sustainable	48.230	78	0.000	95.0	0.56 ^L	4.30	4.12	4.48

⁵Degree of freedom, ⁶Standard deviation and ⁷Mean difference
^H & ^L; higher and lower value of ⁶ & ⁷

Conclusion

The study shows that most of the undergraduates studying agricultural related courses in Nigeria are male and their average age range from 20 – 30 years. Community was the most influencing factor that guides decision of respondents in choosing agriculture. This is evidence as the result showed that undergraduates' willingness towards agriculture is much because of their interest in providing food for the society. However, four important factors have been ranked much by respondents for selecting agriculture (see _a – _d in Table 1) while public sector and order/advises from secondary school agriculture teacher were ranked averagely. Therefore, it is recommended that stakeholders in agricultural education sector should plan on how these factors will influence more students into agricultural courses and also equip public sector support for agricultural graduates.

In determining the perception of undergraduates towards AEE, majority of the respondents have background knowledge of AEE from secondary school and after secondary school respectively. Also, more of the respondents perceive AE as a means of developing agriculture and agreed that training in AE would increase farm output and national income. Therefore, it is infer from here that, AEE should be review and reorganized from secondary school to prospecting undergraduates who will aid in manpower requirement for sustainable agriculture and food security in the a nation.

The result of the study ascertain the contribution of AEE to AD in Nigeria, as respondents strongly agreed that AE brings change through education and communication in farmers' attitude and acquisition of skill towards farming operation. Change in farmers' attitude and skill come in form of either formal or informal education process which transform and develop farm community. Change in farming operation is made possible through research that links farmers with new technology and this was confirmed by respondents as majority agreed that research findings will be meaningless unless accepted by farmers. Therefore, it is recommended that, there should be a healthy coordination between extension departments/institutions and research stations in regards to clients' needs. Furthermore, it is infer from this study that, there is need for articulated and comprehensive agricultural extension policy, a practical and pragmatic youth development and educational programmes of extension for food security and community driven development of extension service to aid development of the sector.

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