cognizancejournal.com
Oyetoro John Oyewole *et al*, Cognizance Journal of Multidisciplinary Studies, Vol.3, Issue.6, June 2023, pg. 221-230
(An Open Accessible, Multidisciplinary, Fully Refereed and Peer Reviewed Journal)
ISSN: 0976-7797
Impact Factor: 4.843
Index Copernicus Value (ICV) = 76.35

ASSESSMENT OF POST GRADUATE AGRICULTURAL STUDENTS POTENTIALS AS AGENT FOR AGRICULTURAL TECHNOLOGY TRANSFER IN FEDERAL UNIVERSITY OF TECHNOLOGY AKURE, NIGERIA

[1]Oyetoro John Oyewole; [2]Jolayemi John Olalere; [2]Afolayan Femi Opeyemi; [2]Yahaya Abdulrauf; [1]Abolaji Mary Olamide

[1]Department of Agricultural Extension & Rural Development, Faculty of Agricultural Sciences, Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria

[2]School of Senior Secondary Education (Voc & Tech), Kwara State College of Education Oro, Kwara State, Nigeria

Corresponding e-mail: jooyetoro@lautech.edu.ng

DOI: 10.47760/cognizance.2023.v03i06.013

ABSTRACT:

The study focused on postgraduate agricultural student potentials as agent for agricultural technology transfer in Federal University of Technology Akure, Nigeria. Structured questionnaire was administrated to thirty (30) respondents. Analysis of the data was carried out using descriptive statistics such as frequency counts, percentage, and weighed mean score while Pearson Product Moment Correlation (PPMC) was used to present the results of the hypotheses. It was discovered that mean years of schooling was 16.63 years. Internet and University library were the major sources of information on Agricultural technologies available to respondents. The major problems that could cause loss of interest towards being an agent of agricultural technology transfer was inadequate funding of agricultural extension. Result also revealed that there is significant relationship between years spent in schooling (r=0.819, p=0.000) and the post graduate students potentials as an agent of agricultural technology transfer. The study concluded that Postgraduate Agricultural Students developed high potentials towards transferring of technologies to farmers. The study therefore recommended that policy makers and extension agency should accommodate and make use of Postgraduate Agricultural Students in the transfer of innovations to farmers especially at a time when the country is experiencing decline in Agricultural extension workers.

Keywords: Post Graduate Student, Agricultural Student, Post Graduate Potentials, Agricultural Technology, Agricultural Technology Transfer

cognizancejournal.com
Oyetoro John Oyewole *et al*, Cognizance Journal of Multidisciplinary Studies, Vol.3, Issue.6, June 2023, pg. 221-230
(An Open Accessible, Multidisciplinary, Fully Refereed and Peer Reviewed Journal)
ISSN: 0976-7797
Impact Factor: 4.843
Index Copernicus Value (ICV) = 76.35

INTRODUCTION

Graduates of Agricultural extension do not get satisfactory jobs and farmers are not getting adequate agricultural extension services, hence both the farmers and agricultural graduates do not receive optimal benefits, hence the need to investigate students potentials in agricultural extension delivery. Agricultural extension delivery is the driver of all agricultural policies and research, without which all efforts in the agricultural ecosystem may not realise its intended goals. According to The Federal Ministry of Agriculture and Rural Development (2022), over the years, the fortunes of agricultural extension system have declined majorly due to decreased funding, policy changes, reduced manpower and lack of interest of young people in agricultural entrepreneurship. The factors causing the decline in the national agricultural extension delivery system include decreasing number of extension agents caused by retirements, deaths and non-replacement. It's on this premise this research work is roofed to examine alternative approach to extension delivery in Nigeria particularly in the area of agricultural technology transfer.

Similarly, the Nigerian extension service is bewildered by several problems. These include insufficiency and instability of extension funding, reduced logistic support for field staff, use of poorly trained personnel at local level, ineffective agricultural research extension linkages, insufficient and inappropriate agricultural technologies for farmers, disproportionate Extension Agent: Farm Family ratio and lack of clientele participation in program development. Others are poor input supply, irregular evaluation of extension programmes and policy, institutional and programme instabilities of National agricultural extension systems (Agbamu, 2005).

In an effort to incorporate students to agricultural development, Okiror and Otabong, (2015) revealed that many colleges of agriculture are now striving to enroll a higher percentage of students in the field of agriculture without minding the perception of the student involved towards farming. The idea that young school leavers who are farmers are failures in life has affected the perception of students towards farming.

In a study conducted by Agumagu, Ifeanyi-obi and Agu,(2017), they found out that majority (59%) of the students had farming experience before gaining admission into the university while 41% had no farming experience before gaining admission into the university. This is an indication that agriculture remains a major source of livelihood for Nigerians. The mean farming experience of the students before gaining admission into the university was shown to be 6 years. In addition, the students perceived that they had the requisite skills needed to provide private agricultural extension services which would enable them to effectively discharge extension service delivery to the farmers when they start their own extension services. Adesoji1, Famakinwa and Eghosa (2019).

Agricultural researchers in Nigerian universities spend available time and money generating agro-technologies that do not address the problems of farmers. Madukwe (2015) observed that Nigerian universities develop new breed of livestock or new method of feeding livestock or new variety of crop or new husbandry practice without reference to the capability of the farmer who will use the "new technology" or the farm condition under which the agro- technology will be applied or the market for the product. The practice exists partly due to the weak or absence of an agricultural extension policy necessary to highlight the areas of research focus in agro-technology generation.

Technology transfer (TT), or transfer of technology (TOT), is an integral part of the extension process involving the transfer and spread of technical innovation and know-how to the farming population (Koutsouris, 2018). According to Altalb, Filipek, and Skowron, (2015), technology transfers include a range of formal and informal cooperation between technology developer and technology seekers. In addition, technology transfers involve the transfer of knowledge and technical-knowhow as well as physical devices and equipment.

Agricultural technology or Agri technology is also known as agritech which is the application of scientific discoveries and knowledge to address farming or farming related problems. Ullah and Zafarullahkhanm (2014) and Abd (2013) stated that Agricultural extension is aimed to transfer of agricultural technology and for persuading farmers to adopt and use these technology on their farms, because farmers need those new and modern technology to increase agricultural production in various types of agricultural crops and the quantities and qualities of consumer goods on the market.

Process of agricultural technology transfer is done through two basic stages. The first one is the transfer and dissemination of agricultural technology to farmers and the second one is to convince farmers to adopt these technologies on their farms Tai, (2012). Agricultural technology transfer is the process of legitimately transferring new agricultural discoveries, improved practices or innovations that may result from research institutions, universities of Agriculture, faculties of agriculture in conventional universities into the agricultural sector for targeted beneficiaries. One of the goals of Agricultural Extension is to transfer agricultural technologies to farmers and his farm family.

The general objective of the study is to assess post graduate student potential as agent of technology transfer in Federal University of Technology, Akure, Nigeria. The specific objectives are to: describe the socio-economic characteristics of the respondents, ascertain the sources of information about agricultural technology available to the respondents, determine the agricultural post graduate student potentials as an agent of agricultural technology transfer and investigate the measures that cause loss of interest towards being an agent of agricultural technology transfer.

METHODOLOGY

This study was carried out in Federal University of Technology, Akure,(FUTA) Nigeria. FUTA, a top ranking University of technology in Nigeria was established in 1981, the university has grown tremendously, stretching its academic disciplines and research across eight different schools and over fifty academic departments. The Mission of FUTA is to promote technological advancement by providing conducive environment for research, teaching and learning engenders development of products that are technologically oriented, self-reliant and relevant to society (FUTA official web, 2023).

The University campus is located in the northwestern flank of Akure in Akure South Local Government Area of ondo state. It occupies an area of about 5km^2 and lies between Latitudes 7°17′–7°19′N and Longitudes 5°7′–5°9′E. The topography of the area indicates a general gentle

cognizancejournal.com
Oyetoro John Oyewole *et al*, Cognizance Journal of Multidisciplinary Studies, Vol.3, Issue.6, June 2023, pg. 221-230
(An Open Accessible, Multidisciplinary, Fully Refereed and Peer Reviewed Journal)
ISSN: 0976-7797
Impact Factor: 4.843
Index Copernicus Value (ICV) = 76.35

slope with gradual increase in elevation from the east and south towards the north-western part and elevation ranging between 372 and 405 m above mean sea level. There are several stream channels trending approximately east-west and north-south direction. The area has mean annual rainfall ranging between 1000 and 1500 mm. The annual mean temperature ranges from 21.9 to 30.4 °C. Humidity is relatively high during the wet season and low during the dry season with values ranging annually from 39.1 to 98.2%. The vegetation is of tropical rain forest which is characterized by thick forest (Akinbode, Eludoyin, and Fashae, 2008)

The population of the study comprises all Postgraduate students in the in Federal University of Technology Akure, Nigeria. Two-stage sampling technique was used for the selection of respondents in this study. The first stage involve the purposive selection of school of Agriculture and Agricultural Technology (SAAT) due to the nature of research work that is focused on agriculture. The second stage involve the purposive selection of post graduate students in the department of Agricultural Extension and Communication Technology due to their training in the field of Agricultural Extension. All the available postgraduate Students in the department formed the sample size of the study (30 respondents). Structured questionnaire was used to obtain relevant information from the respondents.
The independent and dependent variables are the two types of variables measured for the study. Postgraduate agricultural student's potentials as agent for agricultural technology transfer is the dependent variable. Capability of the students towards the transfer of Agriculture Technology were listed out and measured as High Potential=3, Moderate Potential=2, Little Potential=1, No Potential=0. The socioeconomic characteristics of the respondents were independent variables, and was measured accordingly. Descriptive statistics used include frequency counts, means, percentage and weighted mean score, while Pearson Product Moment Correlation (PPMC) is the inferential tool used to test the relationship between variables.

DISCUSSION AND RESULTS

Socio-economic characteristics of the Respondents

Data presented in Table 1 reveals that almost half (56.5%) of the respondents were less than or equal to 30 years, while few (6.6%) of the respondents were within the age range of 41-50 years. The mean age of the respondents was 31.60 years. This means that the respondents are still active, and youthful age of productive years. This will also give opportunity to develop their potentials towards transfer of technology as their youthful age is an advantage to experiment their knowledge gain in the classroom. Also, (40.0%) of the respondents were males while (60.0%) of the respondents were females. This means that post graduates program accommodates all gender which is a very good tool in extension work.
Besides, majority (86.7%) of the respondents practiced Christianity while few (13.3%) of the respondents practiced Islam. This means that religion will not be a barrier to function as agent of technology transfer. Half (50.0%) of the respondents were married while Half (50.0%) of the respondents were single. The table also shows that majority (90.0%) of the respondents, were Yoruba, few (6.7%) of the respondents were Igbo, while few (3.3%) of the respondents were

cognizancejournal.com
Oyetoro John Oyewole *et al*, Cognizance Journal of Multidisciplinary Studies, Vol.3, Issue.6, June 2023, pg. 221-230
(An Open Accessible, Multidisciplinary, Fully Refereed and Peer Reviewed Journal)
ISSN: 0976-7797
Impact Factor: 4.843
Index Copernicus Value (ICV) = 76.35

Hausa. This result will serve as additional advantage in functioning as agent of technology transfer in agriculture since agriculture houses all tribes in Nigeria.

The Mean age of schooling was 16.63years. This implied that the respondents acquired vast knowledge on education which could be tapped to develop their potentials in transferring agricultural technologies to farmers. The mean year of working experience was 4years. This could be leveraged on to advance the capabilities in extension work. The mean household size was 5members. This implied that the respondents have low household size. Majority (73.3%) of the respondents were into trading as secondary occupation, while few (26.7%) of the respondents were artisans. This means respondents have additional engagements besides their studentship.

Table 1: Distribution of the Respondents by their socio-economic Characteristics

n=30

Socio-economic Characteristics	Frequency	Percentage	Mean
Age (Years)			
≤ 31-40	17	56.5	
41-50	11	36.5	31.60
51-60	2	6.6	
Sex			
Male	12	40.0	
Female	18	60.0	
Marital Status			
Single	15	50.0	
Married	15	50.0	
Religion			
Christianity	26	86.7	
Islam	4	13.3	
Ethnicity			
Yoruba	27	90.0	
Igbo	2	6.7	
Hausa	1	3.3	
Years spent in formal schooling			
13-16	13	43.3	16.63
17-23	17	56.7	
Years of Working experience			
≤ 5	17	63.4	
6-10	10	26.7	4.40
11-15	3	9.9	
Household size			
≤ 4	7	23.4	
5-8	21	70	5

9 and above	2	6.6
Secondary Occupation		
Trading	22	73.3
Artisan	8	26.7

Source: Field Survey, 2023

Sources of information about agricultural technology available to the respondents
Table 2 revealed the distribution of respondents according to their sources of information available to postgraduate agricultural student potentials as agent for agricultural technology transfer, Majority of the respondents got their information from Internet (100.0%). This implies that the respondents could obtain relevant agricultural technologies information the internet, hence such information package should be increased on internet.. Few (6.7%) of the respondents got their information from University Lecturers. This implies that some respondents relied on information from the lecturers to better their lives hence lecturers must provide reliable information on agricultural technologies to students.

Table 2: Distribution of Respondents according to sources of information on agricultural technology

Source of information*	Frequency	Percentage
Extension workers	17	56.7
University libraries	24	80.0
Radio	15	50.0
Television	21	70.0
Internet	30	100
Agricultural pamphlets / Bulletins	24	80.0
Research Institute	. 16	53.3
ADP	16	53.3
Newspaper	9	30.0
University Lecturers	2	6.7
Fellow Student	5	16.7

Source: Field Survey, 2023
***Multiple response**

Agricultural post graduate student potentials as an agent of agricultural technology transfer In Table 3, the variables that attracted high post graduate agricultural students' potentials as agent for agricultural technology transfer are the ones that value of the grand mean is greater than each of the WMS. The table revealed that respondents developed high potential to "develop students' interest to venture into agriculture as a career". This means that post graduate agricultural students developed high capability to venture into agriculture as a career.

(An Open Accessible, Multidisciplinary, Fully Refereed and Peer Reviewed Journal)
ISSN: 0976-7797
Impact Factor: 4.843
Index Copernicus Value (ICV) = 76.35

Respondents also developed high potential towards identification of farming areas for development through agricultural technology. This implies that respondents are willing to source for latest agricultural technology to address farming problems which is one of the core function agricultural extension services.

Similarly, respondents developed high potential to collaboration with extension agents in technology transfer process. This means that respondents are eager to partner with extension agency and use their knowledge gathered to implement the technology transfer process. In addition, respondents developed high potentials towards usage of social media channels to diffuse agricultural technology information. In Nigeria, the use of social media among the youths is increasing tremendously, this has to be channeled towards promoting agricultural technologies usage on the social media.

Table 3: Distribution of Respondents according to the post graduate agricultural students' potentials as agent for agricultural technology transfer

Potentials	WMS	Decision
Develop students interest to venture into agriculture as a career	2.63	High
Identification of farming areas for development through agricultural technology	2.60	High
Collaborating with extension agents in technology transfer process	2.23	Low
Transfer agricultural technology through commencement of private extension	2.70	High
Join agricultural extension agency as career	2.30	Low
Collaborating with Non _Governmental organizations and community based organizations involved in the agricultural technology transfer	2.37	Low
Putting personal resources in the agricultural technology transfer process	2.20	Low
Usage of social media channels to diffuse agricultural technology information	3.6	High
Capability to penetrate youths to use latest agricultural technology to boost food production	2.50	Low

Grand mean: 2.58
WMS: Weighted Mean Score
Source: field survey, 2022

(An Open Accessible, Multidisciplinary, Fully Refereed and Peer Reviewed Journal)
ISSN: 0976-7797
Impact Factor: 4.843
Index Copernicus Value (ICV) = 76.35

Problems that could cause loss of interest towards being an agent of agricultural technology transfer

Table 4 indicate the problems that could cause loss of interest towards being as an agent of agricultural technology transfer. Majority (96.7%) claimed inadequate funding of agricultural extension. Funding is an indispensable ingredient for any successful agricultural extension work. This result supported the Federal Ministry of Agriculture and Rural Development (2022) that over the years, the fortunes of agricultural extension system have declined majorly due to decreased funding, policy changes and reduced manpower. Efforts should be made to finding alternative funding sources beside the traditional ministry operated approach. Only (66.6%) claimed poor knowledge regarding improved agricultural technologies.

Table 4: Distribution of respondents according to problems that could cause loss of interest towards being an agent of agricultural technology transfer

Problems*	Frequency	Percentage
Inadequate funding of agricultural extension	30	96.7
Poor policy decision and implementation of extension agency	30	86.6
Poor knowledge regarding improved agricultural technologies	30	66.6
Poor remuneration of extension workers	30	76.6
Poor motivation of extension agents	30	90.0
Lack of appropriate extension tools for technology transfer	30	80.0
High cost of agriculture technologies	30	76.6

Source: field survey, 2022
***Multiple response**

Pearson Correlation analysis showing the relationship between the socio-economic characteristics of the respondents and the postgraduate students potentials as an agent of agricultural technology transfer.

Data presented in table 6 shows that years of working experience (r= 0.819, p =0.000) has positive significant relationship with potential level of postgraduate students as agent for agricultural technology transfer. This means that, the more they add more years to their years of working experience the more capability to transfer technology. Years of working experience contribute greatly to the performance of individual at work, hence respondents with vast experience will tend to function as agent of technology transfer to teeming farmers in the country.

ISSN: 0976-7797
Impact Factor: 4.843
Index Copernicus Value (ICV) = 76.35

Table 6: Socioeconomic Characteristics of Respondents According to Pearson Correlation Analysis.

Selected Socio-economic Characteristics	Correlation (r = value)	P- value	Remark
Age	-0.035	0.854	Non- Significant
Years of formal schooling	-0.142	0.455	Non- Significant
Years of working Experience	0.819*	0.000	Significant

Source: Field Survey, 2023
**** Correlation is significant at the 0.01 level (2-tailed).**

CONCLUSION AND RECOMMENDATIONS

This study concluded that

- Major sources of information available to the respondents on agricultural technologies were Internet and University Lecturers.
- Respondents developed high potentials as agent of agricultural technology transfer.
- Problems that could cause loss of interest toward being as an agent of agricultural technology transfer were inadequate funding of agricultural extension and poor remuneration of extension staff.

The study therefore recommended that policy makers and Extension agency should accommodate and make use of Agricultural postgraduate students in the transfer of agricultural innovations to farmers especially at a time when the country is experiencing decline in Agricultural extension workers.

ACKNOWLEDGEMENT

The study acknowledge the cooperation of staff and post graduates students of the Federal University of Technology, Akure.

CONFLICT OF INTEREST

None

REFERENCES

1. Abd, H. (2013). Role of extension center on farmers training for using modern agricultural technology in Polly plastic. Case study of Thiqar province in south of Iraq, *International Journal of Sustainable Development and Green Economics*, 2(12), pp. 96-99.
2. Adesoji, S.A., Famakinwa and Eghosa A.E. (2019). Assessment of Agricultural Extension Students' Interest in Providing Private Extension Services in Nigeria. *The Journal of Agricultural Sciences - Sri Lanka.* 14 (1), pp 57 – 66.

ISSN: 0976-7797
Impact Factor: 4.843
Index Copernicus Value (ICV) = 76.35

3. Agbamu, J. U. (2005) Problem and Prospects of Agricultural Extension Service in Development Countries in Agricultural Extension in Nigeria S. F. Afolayan (ed) Ilorin AESON, pp. 159 – 169
4. Agumagu, A.C., Ifeanyi-obi, C.C. and Agu, C. (2017). Perception of Agriculture Students Towards Farming as a Means of Sustainable Livelihood in Rivers State, Nigeria. The 22nd Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria. University of Port Harcourt, River State, Nigeria. pp108-116.
5. Akinbode, O.M., Eludoyin, A.O. and Fashae, O.A.,(2008). Temperature and relative humidity distributions in a medium-size administrative town in southwest Nigeria. J. *Environ.Manage*. 87 (1), 95–105.
6. Altalb, A. A. T., Filipek, T. and Skowron, P. (2015). The Role of Agricultural Extension in the Transfer and Adoption of Agricultural Technologies. *Asian Journal of Agriculture and Food Sciences* 3(5) pp 500-509.
7. Federal Ministry of Agriculture and Rural Development (2022). FG trains extension workers in FCT on agricultural value chain. Available online https://gazettengr.com/fg-trains-extension-workers-in-fct-on-agric-value-chain/. Accessed on 15 March, 2023
8. FUTA, official web (2023). Welcome to FUTA. https://futa.edu.ng/. Accessed on 15 March, 2023
9. Koutsouris, A. (2018). "Role of Extension in Agricultural Technology Transfer: A Critical Review," Innovation, Technology, and Knowledge Management, in: Kalaitzandonakes N., Elias G. C., Grigoroudis E. and Rozakis S. (eds), From Agriscience to Agribusiness, Springer. pp 337-359
10. Madukwe M.C. (2015). Practice Without Policy: The Nigerian Agricultural Extension Service. The 30th lecture series of University of Nigeria, Nsukka. Available online https://www.unn.edu.ng/wp-content/uploads/2015/09/30th-Lecture.pdf. Accessed on 15 March, 2023
11. Okiror J.J, and Otabong D. (2015). Factors influencing career choice among undergraduate Students in an African university context: The Case of Agriculture Students at Makerere University, Uganda. *Journal of Dynamics in Agricultural Research*. 2(2) pp. 12-20.
12. Tai, H. (2012). Improve the management of dissemination of agricultural technology programs in Iraq, *The Euphrates Journal of Agricultural Sciences*, 12(1) pp. 241- 256.
13. Ullah R. and Zafarullahkhanm, M. (2014). Extension services and technology adoption of date palm in District Dera Ismail Khan, *Pakistan Journal Agricultural Research*, 27(2) pp. 160-166.