Awareness and Access of Research Output from Faculty of Agriculture, Nnamdi Azikiwe University to Farmers in Awka Metropolis

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ABSTRACT

The study examined awareness and access of research output from Faculty of Agriculture, Nnamdi Azikiwe University (FANAU) to farmers in Awka Metropolis, Anambra State, Nigeria. Multiple stage sampling technique was used to select 100 respondents from residents within and around Awka Metropolis. Primary data were collected using interview schedule and focus group discussion. Data collected were analysed using descriptive statistics. The Hypothesis was tested using independent T Test to determine significant differences in the socio-economic characteristics of respondents and their access to research output from FANAU. Results revealed that only 35% of the farmers interviewed were aware of FANAU research output. Out of the 35 farmers that were aware, 66.0% became aware through radio. Only 28% of farmers reported that they have access to research output from FANAU. About 91%of the farmers that were aware of the research output from FANAU, was in the area of crop production. More than 95% of the farmers that had access, expressed difficulty in accessing FANAU research output. Lack of link ($\bar{x}$= 3.42) between farmers and researchers was perceived by farmers as the most serious challenge in accessing research output from FANAU. The study established that socio-economic characteristics such as age (p <0.001), educational Level (p <0.001) and farming experience (p <0.001) had significant relationship with access at both 1% and 5% level of significance. The study concluded that only 35% of farmers were aware and 28% had access to research output from FANAU.

INTRODUCTION

Agriculture can be defined as the practice of cultivating crops and rearing animals for food, fibre, and other products. It involves various activities such as land preparation, planting, harvesting, and marketing of agricultural products.

According to African Development Bank (2020), agriculture is considered as the backbone of the economy, providing employment and income to millions of people. It accounts for about 15% of the continent's GDP and employs over 60% of the population. The sector also plays a crucial role in ensuring food security and reducing poverty in the region.

In a comprehensive review of trends, priorities, and challenges by the International Food Policy Research Institute IFPRI (2020), it was stated that in Africa, access and relevance of agricultural research output to rural farmers is critical to achieving food security and reducing poverty. According to the African Union Commission (2015), agricultural research should focus on developing technologies and innovations that are relevant and accessible to smallholder farmers in rural areas.

Sub-Saharan Africa is home to some of the world's poorest countries, where agriculture is the main source of livelihood for rural communities. However, the sector is faced with numerous challenges such as climate change, low productivity, and inadequate infrastructure. As a result, many farmers struggle to make ends meet and are often unable to access markets for their produce (World Bank, 2020). Also, in sub-Saharan Africa, IFPRI (2020) has identified the need for more investment in agricultural research and development to improve the productivity and income of smallholder farmers. The institute emphasizes the importance of involving farmers in the research process to ensure that the output is relevant to them.

In Nigeria, agriculture is the largest employer of labour and contributes about 25% of the country's GDP. The sector has the potential to transform the economy and create jobs for millions of people. However, like other African countries, Nigerian agriculture is faced with challenges such as low productivity, inadequate infrastructure, and poor market access (Federal Ministry of Agriculture and Rural Development, 2021). Agriculture is a vital sector in Nigeria's economy, contributing significantly to the country's Gross Domestic Product (GDP) and providing employment opportunities for a large Percentage of the population (Ogundele *et al*., 2018).

In Nigeria, the Federal Ministry of Agriculture and Rural Development has established several research institutes and centres to develop technologies and innovations that are relevant to local farmers. The ministry also collaborates with international organizations such as the International Institute of Tropical Agriculture (IITA) to improve the access and relevance of agricultural research outputs to rural farmers.

However, despite the importance of agriculture, rural farmers in Nigeria face numerous challenges, including low productivity, inadequate access to markets, and limited access to information and technology (Adepoju *et al*., 2019). Agricultural research and technological development are prerequisites for increasing agricultural productivity and generating income for farmers and the rural work force; thereby solving societal and national problems (Adeoye, 2005; Osabohien *et al*, 2019).

Awareness and access of agricultural research output to farmers refer to the knowledge and availability of research findings and innovations to farmers in rural areas. It involves ensuring that farmers have access to the latest technologies, information, and best practices to improve their productivity and livelihoods.

The Faculty of Agriculture at NnamdiAzikiwe University, Awka is one of the institutions in Nigeria that is actively engaged in research aimed at improving agricultural practices and addressing the challenges faced by farmers. It plays a crucial role in generating research output aimed at improving agricultural production and rural livelihoods.

Over the years, Faculty of Agriculture, NnamdiAzikiwe University, Awka, has been engaged in research activities and introduction of her research output through extension programmes to farmers in Awka Metropolis and surrounding communities. Some of these programmes include: Consumers and Farmers forum on the Unizik 94.1FM anchored by Agricultural Technologists of Department of Agricultural Economics and Extension, Agricultural journals and research work published by Lecturers in FANAU as well as extension outreaches in villages. Extension programmes have been the main conduit for disseminating agricultural information and supporting of rural adult learning as well as assisting farmers in developing their farm technical and managerial skills. It is expected that extension programmes will help increase farm productivity, farm revenue, reduce poverty and minimize food insecurity.

In spite of all these efforts, farmers access to research output is very crucial and fundamental in ensuring productivity and sustainability of the beneficiaries (farmers). The use of radio and journal publications to disseminate information on research output may be a good effort but farmers who may not have access to radio or the time to listen to radio or who may not be literate enough may find it quite difficult to access information through these means.

Moreover, it is one thing to have access to research output and another is for the research output to be relevant to the farmers' needs. Waddington and White (2018) emphasizes the need to improve the quality and relevance of agricultural research for development. The relevance of agricultural research output is crucial for productivity, sustainability and food security. To ensure that research outputs are relevant and impactful, researchers should collaborate closely with farmers and other end users to understand their felt needs and priorities.

Despite the availability of valuable agricultural research output at FANAU, it is not clear whether farmers in Awka Metropolis are aware of the output. Also, one thing is to be aware another is to have access to such

output. Presently, there is limited research specifically focused on the awareness and access of research outputfrom FANAU to farmers in Awka Metropolis, Nigeria. Therefore, it is important to examine the awareness and access of the research output from FANAU to ruralfarmers in Awka Metropolis in order to ensure that the research effort is positively affecting the development of Anambra State, Nigeria.

On the basis of the foregoing, the study sought to: describe the socio-economic characteristics of the respondents; ascertain the awareness of farmers about the research output from FANAU; ascertain farmers' access to research output from FANAU; identify challenges farmers face in accessing research output from FANAU; and identify strategies to enhance the relevance of research output from FANAU to farmers.

Hypothesis of the Study

H_{O1}: There is no significant relationship between the research output from FANAU and their access to farmers in Awka Metropolis.

METHODOLOGY

The study was conducted in the towns surrounding NnamdiAzikiwe University, Awka (Coordinates: 6.2459°N, 7.1199°E) (Wikipedia 2023) which are located within and around Awka Metropolis in Anambra State of the south-eastern region of Nigeria. Awka Metropolis extended to two Local Government Areas (LGAs) namely Awka South and Awka North LGAs. Agriculture is practised within and around the Metropolis with crops such as yam, cassava, maize as well as animal production like sheep, goat, cattle and poultry. The population of the study comprised all farmers in the towns spanning the area around the Nnamdi Azikiwe University, Awka. Multi-stage sampling technique was used to select respondents for the study. In the first stage, five town communities with consistent farming operations inside and around the University were purposively selected. In the second stage, two villages engaged in active farming were also purposively selected from each of the selected towns to give a total of ten villages. In the final stage, a list of 20 farmers was compiled from each of the ten villages and ten respondents randomly selected to give a total of one hundred respondents for the study. Data were obtained by means of questionnaire/interview schedule issued to the selected farmers. The socio-economic characteristics of the respondents were measured thus: age (years), farm size (ha), income (Naira) etc. In case of awareness of research output from FANAU, farmers were asked to indicate 'yes' or 'no' in the option provided. Similarly, farmers were asked to indicate 'yes' if they have access to research output from FANAU and 'no' if they have no access. Challenges of farmers in accessing research outputfrom FANAU were captured on a 5point Likert type scale. A mean threshold of 3.0 was used for the decision-making. Variables with a mean score of 3.0 and above were said to be serious challenges to the farmers in accessing research outputs from FANAU. Conversely, variables with a mean score below 3.0 were not considered as serious challenges of concern to the farmers.

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

The results in Table 1 reveal that majority of the respondents (56.0%) were males.Theaverage age of respondents was 43 years while the average year of formal education was 13 years with 11.0% of the respondents having no formal education. The implication of this finding is that the respondents who are still in their active years can utilize their energy in farming activities if they are aware of the research output from FANAU and most importantly if they have access to the output. Also, 13 years of formal education implies that at least 50% of the respondents may have completed their secondary education and so can be more receptive to research output from FANAU. The result is similar to the study conducted by Modirwa (2019) in which most of the respondents received up to 13 years of formal education.Majorityof the respondents (75.0%) were married which implies that family labour may be available for utilization in the execution of research output from FANAU. The average monthly income was ₦95,099.01 indicating that the respondents are already performing above national minimum wage of ₦30,000.00 and could do more if they have access to research output from FANAU. The diverse socio-economic characteristics of respondents is in line with recommendation of Ullah, *et al*, (2022) that any intervention aimed at the awareness of agricultural research should recognize the heterogeneity in the farmers' socioeconomic characteristics.

Table 1: Distribution of respondents based on selected Socio-economic characteristics

Variables	Frequency(f)	Percentage(%)	Mean($\bar{x}$)	Std Deviation.
Gender				
Male	56	56		
Female	44	44		
Age(years)				
≤30	11	11		
31-40	36	36	42.83	10.33
41-50	27	27		
51-60	5	5		
Education(years)				
0	11	11	13.25	0.77
1-6	30	30		
7-12	40	40		
>12	19	19		
Occupation				
Farmer	49	49		
Trader	29	29		
Craftsman	12	12		
Civil/Public Servant	10	10		
Household size				
<4	34	34		
5-8	57	57	6	
>8	9	9		
Marital status				
Single	19	19		
Married	75	75		
Widow(er)	3	3		
Divorced	3	3		
Monthly household income				
<30000	3	3	95099.01	48489.90
30000-59000	18	18		
60000-89000	34	34		
90000-119000	31	31		
≤120000	14	14		
Farming experience(years)				
<5	10	10		
5-9	26	26		
10-14	35	35		
15-19	29	29		
Farm size(plots)				
1	18	18		
2	30	30		
3	18	18		
4	34	34		
Extension contact				
Contact	36	36		
No contact	64	64		

Source: field survey, 2023

Awareness of Research Outputs from FANAU

The data based on awareness of research output from FANAU was represented on Table 2. Only 35% of the farmers interviewed were aware of research output from Faculty of Agriculture NnamdiAzikiwe University Awka. The low percentage of farmers that are aware of research output from FANAU is an indication of weak extension system. This has serious implication on food productivity and security as well as setback on

huge investments in research and industry. Out of the thirty-five percent of farmers that are aware of FANAU research output: 66.0% became aware through radio; 14.0% by their neighbours; 6.0% by the staff of the university; 9.0% by television programmes; 3% farmers were informed through community meetings and 3% were informed by friends.This implies that use of radio for creation of awareness remains a veritable tool that should be explored. Aminu, *et al*, (2018) suggest that radio should be utilized more by extension service providers. It is curious to observe that the researchoutput most of the farmers were aware of was mostly in area of crop production (91.43%) while only 2.86% of farmers were aware of research output in the areas of animal production, food technology and soil test respectively. In a study carried out by Ndimbwa, *et al* (2019), farmer groups and agricultural shows were suggested as channels to speed up agricultural information and knowledge penetration to farmers.

Table 2: Awareness of Research Outputs from FANAU

Variables	Frequency(*f*)	Percentage(%)
Awareness of research output from FANAU		
Yes	35	35.00
No	65	65.00
Sources of awareness:		
Radio	23	66.00
Television	3	9.00
Community meetings	1	3.00
Neighbour	5	14.00
Friends	1	3.00
University staff	2	6.00
Research output they were aware of:		
Crops	32	91.43
Animals	1	2.86
Food	1	2.86
Soil	1	2.86

Access to Research Outputs from FANAU

Data in Table 3 reveal that only 28% of farmers reported that they have access to research output from FANAU. This implies that majority of farmers have no access to research output from FANAU. This is unfortunate and may have been part of the problems for the food crisis being experienced in various parts of the country. Part of the primary tasks of extension agents is dissemination of new technologies to farmers in form of research output from universities especially from faculties of agriculture.

In Table 3, out of the 28% of farmers that had access to research output from FANAU, 42% perceived that their means of access was through UNIZIK radio. This implies that UNIZIK radio is playing a crucial role in dissemination of research output from all the faculties in NnamdiAzikiwe University Awka. About 29% of farmers perceived training programme as their means of access to research output from FANAU. Only 14% of farmers perceived extension workers as their means of access to FANAU research output. This finding is in line with Ogunlade*et al,* (2019) report that only 5% of smallholder farmers in Nigeria have access to scientific publications andOnwuegbuna*et al,* (2018) report that only 10% of smallholder farmers in Nigeria had access to agricultural research information, with the majority relying on traditional knowledge and practices. Therefore, the need to empower the extension unit of FANAU cannot be overemphasized. Eze *et al*, (2020) confirm the need for agricultural extension which can serve as a bridge between researchers and farmers.

Table 3: Access to Research Outputs from FANAU

Variables	Frequency(f)	Percentage(%)
Access to research output from FANAU		
Yes	28	28.00
No	72	72.00
Means of assessing research output from FANAU		
Books/Journals	3	10.71
Training programmes	8	28.57
Technologists/Technology demonstrations	1	3.57
Extension workers	4	14.26
Researchers	0	0.00
UNIZIK radio	12	42.86
Ease of accessing research output from FANAU		
Very difficult	2	
Difficult	95	
Not difficult	3	

Challenges of farmers in accessing research output from FANAU

The results in Table 4 reveal that lack of link between researchers and farmers ($\bar{x}$= 3.42), was perceived by the respondents as a very serious challenge in accessing research output from FANAU. Ngunyale (2023) affirms that there is a significant disconnect between the research conducted in academic institutions and the needs of the farmers. Also, lack of extension workers to link the farmers with the researchers ($\bar{x}$= 3.33) posed another serious challenge to farmers in accessing research output from FANAU. This is true because extension workers' primary role is to make available to farmers new research findings and bring farmers' problems to researchers. Uganneya*et al* (2013) observed that lack of extension workers to link farmers and researchers creates a deficit in accessing research findings related to agriculture. Furthermore, lack of money to purchase ICTs and airtime ($\bar{x}$= 3.21) was also perceived as a serious challenge. Olayiwola, *et al*, (2023) identified that high cost of facilities was one of the challenges farmers face in accessing ICTs. However, inability of farmers to use ICTs ($\bar{x}$= 2.32) to access research output was perceived as not serious challenge in accessing research output from FANAU. The mean clustered around 3.00 was an indication that the challenges were serious and equally affected majority of the farmers.

The values of the standard deviations were greater than unity showing high variability of farmer's responses and indicating that the challenges may not be as serious as expected.

Table 4. Challenges of farmers in accessing research outputs from FANAU

Variables	Mean($\bar{x}$)	Std. Dev.	Level
Lack of link between researchers and farmers	3.42	1.42	1st
Lack of extension workers to link farmers and researchers	3.33	2.31	2nd
Inability of farmers to use ICTs to access research output	2.32	2.00	4th
Lack of money to purchase ICTs and airtime	3.21	1.30	3rd

Source: field survey, 2023

Table 5. Test of Null Hypothesis: No significant relationship between farmers selected socioeconomic characteristics and access to research output

Socio-economic characteristics(SC)	**Mean value of SC**	**Mean value of Access**	**T-value**
Sex	0.56	0.37	1.08440
Age	42.83	0.37	40.5634
Educational level	2.67	0.37	12.0376
Farming experience	12.00	0.37	12.6760
Farm size	2.94	0.37	12.6760
Major occupation	1.83	0.37	7.4775
Monthly income	3.85	0.37	118.9420

Except sex, all the selected socio-economic characteristics age ($p < 0.001$), educational. Level ($p < 0.001$), farming experience ($p < 0.001$), cooperative membership ($p < 0.001$), farm size ($p < 0.001$), major occupation ($p < 0.001$), monthly income ($p < 0.001$), had significant relationship with awareness at 1% and 5% as shown in the table above, therefore, Ho: that no significant relationship between farmers selected socio-economic characteristics and access to research output is rejected and Ha is accepted. THhis aligns with the study by Ullah, *et al,* (2022) which found out that level of farmers' education had great influence on their awareness and ability to access research outputs.

CONCLUSION AND RECOMMENDATION

The study established that only few farmers were aware of research output from Faculty of Agriculture, NnamdiAzikiwe University, Awka. Also, few farmers had access to research output from FANAU. Majority of farmers perceived that lack of link between researchers and farmers was a very serious challenge in accessing research output from FANAU. The study recommended among other things that researchers should collaborate with farmers through the help of extension workers from conception of research to the end.

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